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Committee on the Peaceful Uses of Outer Space
Fifty-eighth session
Vienna, 10-19 June 2015

Annotated provisional agenda*

I. Provisional agenda

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2. Adoption of the agenda.
3. Statement by the Chair.
4. General exchange of views.
5. Ways and means of maintaining outer space for peaceful purposes.
6. Report of the Scientific and Technical Subcommittee on its fifty-second session.
7. Report of the Legal Subcommittee on its fifty-fourth session.
8. Space and sustainable development.
9. Spin-off benefits of space technology: review of current status.
10. Space and water.
11. Space and climate change.
12. Use of space technology in the United Nations system.
13. Future role of the Committee.
14. Other matters.
15. Report of the Committee to the General Assembly.

* The present document was not submitted within the period required by the 10-week rule owing to the need to await the finalization of the report of the Legal Subcommittee on its fifty-fourth session, held from 13 to 24 April 2015.

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II. Annotations[1]

1. Opening of the session

The fifty-eighth session of the Committee on the Peaceful Uses of Outer Space will be opened in the morning of Wednesday, 10 June 2015.

2. Adoption of the agenda

The agenda will be adopted immediately after the opening of the session.

3. Statement by the Chair

Following the adoption of the agenda by the Committee, the Chair will make a statement reviewing developments of relevance to the work of the Committee that have taken place since its fifty-seventh session.

4. General exchange of views

The Committee will begin its substantive work with a general exchange of views. As a general rule, statements should not exceed 10 minutes.

5. Ways and means of maintaining outer space for peaceful purposes

In paragraph 14 of its resolution 69/85, the General Assembly requested the Committee to continue to consider, as a matter of priority, ways and means of maintaining outer space for peaceful purposes and to report thereon to the General Assembly at its seventieth session, and agreed that during its consideration of the matter the Committee could continue to consider ways to promote regional and interregional cooperation and the role that space technology could play in the implementation of recommendations of the United Nations Conference on Sustainable Development.

In paragraph 15 of the same resolution, the Assembly welcomed the fact that the Committee, at its fifty-seventh session, had agreed to consider, under the item entitled "Ways and means of maintaining outer space for peaceful purposes", the broader perspective of space security and associated matters that would be instrumental in ensuring the safe and responsible conduct of space activities, and to identify effective tools that could potentially provide the Committee with new guidance, in a pragmatic manner and without prejudice to the mandate of other intergovernmental forums. Furthermore the Assembly noted with satisfaction that, in that regard, and in line with resolution 68/50, the Committee had agreed to consider at its fifty-eighth session, in 2015, the recommendations contained in the report of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities (A/68/189), with a view to identifying those recommendations that could, to the extent practicable, be adapted to and instrumental in ensuring the safety of space operations and the long-term sustainability of outer space activities in general.

[1] The annotations and the indicative schedule of work are not part of the agenda to be adopted by the Committee on the Peaceful Uses of Outer Space.

In accordance with the agreement reached by the Committee at its fifty-seventh session (A/69/20, para. 374), the Committee will have before it a note by the Secretariat containing views submitted by States members of the Committee on the recommendations of the Group of Governmental Experts (A/AC.105/1080 and Add.1 and 2).

The Scientific and Technical Subcommittee, at its fifty-second session, noted that the General Assembly, in paragraph 6 of its resolution 69/38, had decided to convene, within existing resources, a joint ad hoc meeting of the Disarmament and International Security Committee (First Committee) and the Special Political and Decolonization Committee (Fourth Committee) to address possible challenges to space security and sustainability, and to include in the provisional agenda of its seventieth session, under the item entitled "General and complete disarmament", a sub-item entitled "Joint ad hoc meeting of the First and Fourth Committees on possible challenges to space security and sustainability". The Subcommittee requested the Secretariat to report to the Committee at its fifty-eighth session on the preparations for that joint ad hoc meeting and to inform the Committee on the planned format, agenda and procedures for the meeting, as well as on the expected outcome of the meeting and any budget implications (A/AC.105/1088, paras. 257-258).

6. Report of the Scientific and Technical Subcommittee on its fifty-second session

In accordance with paragraph 8 of General Assembly resolution 69/85, the Scientific and Technical Subcommittee, at its fifty-second session, considered the following substantive items:

(a) United Nations Programme on Space Applications (see A/AC.105/1088, paras. 31-52);

(b) Space technology for socioeconomic development in the context of the United Nations Conference on Sustainable Development and the post-2015 development agenda (see A/AC.105/1088, paras. 53-69 and annex I, paras. 2-7);

(c) Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment (see A/AC.105/1088, paras. 70-84);

(d) Space debris (see A/AC.105/1088, paras. 85-113);

(e) Space-system-based disaster management support (see A/AC.105/1088, paras. 114-132);

(f) Recent developments in global navigation satellite systems (see A/AC.105/1088, paras. 133-155);

(g) Space weather (see A/AC.105/1088, paras. 156-169);

(h) Near-Earth objects (see A/AC.105/1088, paras. 170-191);

(i) Use of nuclear power sources in outer space (see A/AC.105/1088, paras. 192-208 and annex II);

(j) Long-term sustainability of outer space activities (see A/AC.105/1088, paras. 209-259 and annex III);

(k) Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union (see A/AC.105/1088, paras. 260-270);

(l) Draft provisional agenda for the fifty-third session of the Scientific and Technical Subcommittee (see A/AC.105/1088, paras. 271-282).

United Nations Programme on Space Applications

In paragraph 20 of its resolution 69/85, the Assembly encouraged the regional centres for space science and technology education, affiliated to the United Nations, to continue to promote greater participation of women in their education programmes, and agreed that the regional centres should continue to report to the Committee on their activities.

Space-system-based disaster management support

The Committee, at its fifty-eighth session, will have before it a note by the Secretariat entitled "United Nations Platform for Space-based Information for Disaster Management and Emergency Response: proposed workplan for the biennium 2016-2017" (A/AC.105/1093).

Long-term sustainability of outer space activities

The Committee, at its fifty-seventh session, agreed on the programme of work for finalizing the report of the Working Group on the Long-term Sustainability of Outer Space Activities and the set of draft guidelines for the long-term sustainability of outer space activities (A/69/20, para. 199). The Committee also agreed that the fifty-eighth session of the Committee, in 2015 would be the deadline for proposing significant new elements to existing guidelines and/or additional draft guidelines (A/69/20, para. 199 (c)).

At the fifty-second session of the Scientific and Technical Subcommittee, the Working Group noted that it, the Working Group, had not affirmed during that session of the Subcommittee that it could fully proceed with its workplan, that no revision of the workplan had been discussed during that session of the Subcommittee, and that it would consider the matter at the fifty-eighth session of the Committee, in 2015 (A/AC.105/1088, annex III, para. 6).

The Committee, at its fifty-eighth session, will have before it a working paper by the Chair of the Working Group containing a draft report of the Working Group on the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/L.343), which has already been made available to the Scientific and Technical Subcommittee at its fifty-second session (A/AC.105/1088, para. 212 (b) and annex III, para. 3 (b)).

The Committee will also have before it an updated version of the set of draft guidelines, based on the work conducted by the Working Group during the fifty-second session of the Subcommittee and contained in

document A/AC.105/L.298, as agreed by the Working group during the fifty-second session of the Subcommittee (A/AC.105/1088, annex III, para. 14).

The Committee will further have before it working papers submitted by the Russian Federation contained in documents A/AC.105/L.293, A/AC.105/L.294, A/AC.105/L.295, and A/AC.105/L.296, which were made available to the Subcommittee at its fifty-second session as conference room papers (A/AC.105/1088, para. 212 (h)-(j) and (m), and annex III, para. 3 (h)-(j) and (m)).

Draft provisional agenda for the fifty-third session of the Scientific and Technical Subcommittee

The deliberations of the Subcommittee on the draft provisional agenda for its fifty-third session are reflected in the report on its fifty-second session (A/AC.105/1088, paras. 273-274 and annex I, para. 8).

The Subcommittee, at its fifty-second session, agreed on the items to be proposed to the Committee on the Peaceful Uses of Outer Space for inclusion in the agenda of the Subcommittee at its fifty-third session (A/AC.105/1088, para. 273).

The Subcommittee noted that the topic for the symposium to be organized in 2016 by the Office for Outer Space Affairs, in accordance with the agreement reached by the Subcommittee at its forty-fourth session, in 2007 (see A/AC.105/890, annex I, para. 24), should be "The role of industry in space exploration" (A/AC.105/1088, para. 274 and annex I, para. 8).

The deliberations on organizational matters are reflected in paragraphs 275 to 282 of document A/AC.105/1088.

7. Report of the Legal Subcommittee on its fifty-fourth session

In accordance with paragraph 4 of General Assembly resolution 69/85, the Legal Subcommittee, at its fifty-fourth session, considered the following substantive items:

(a) Information on the activities of international intergovernmental and non-governmental organizations relating to space law (see A/AC.105/1090, paras. 35-49);

(b) Status and application of the five United Nations treaties on outer space (see A/AC.105/1090, paras. 50-74);

(c) Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union (see A/AC.105/1090, paras. 75-98);

(d) National legislation relevant to the peaceful exploration and use of outer space (see A/AC.105/1090, paras. 99-110);

(e) Capacity-building in space law (see A/AC.105/1090, paras. 111-134);

(f) Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (see A/AC.105/1090, paras. 135-153);

(g) General exchange of information and views on legal mechanisms relating to space debris mitigation measures, taking into account the work of the Scientific and Technical Subcommittee (see A/AC.105/1090, paras. 154-184);

(h) General exchange of information on non-legally binding United Nations instruments on outer space (see A/AC.105/1090, paras. 185-203);

(i) Review of international mechanisms for cooperation in the peaceful exploration and use of outer space (see A/AC.105/1090, paras. 204-216);

(j) Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-fifth session (see A/AC.105/1090, paras. 217-235).

Status and application of the five United Nations treaties on outer space

The Subcommittee endorsed the recommendation that the mandate of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space be extended for one additional year (A/AC.105/1090, para. 54 and annex I, para. 16).

Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-fifth session

The Subcommittee, at its fifty-fourth session, agreed on the items to be proposed to the Committee on the Peaceful Uses of Outer Space for inclusion in the agenda of the Subcommittee at its fifty-fifth session (see A/AC.105/1090, para. 223-224).

The Subcommittee agreed that the International Institute of Space Law and the European Centre for Space Law should again be invited to organize a symposium, to be held during its fifty-fifth session, and noted that delegations wishing to propose topics for the symposium could do so directly to the organizers (A/AC.105/1090, para. 224).

The deliberations on organizational matters are reflected in paragraphs 226 to 235 of document A/AC.105/1090.

8. Space and sustainable development

The deliberations of the Committee at its fifty-seventh session on its agenda item on space and sustainable development are reflected in its report (A/69/20, paras. 295-315).

9. Spin-off benefits of space technology: review of current status

The deliberations of the Committee at its fifty-seventh session on its agenda item entitled "Spin-off benefits of space technology: review of current status" are reflected in its report (A/69/20, paras. 316-325).

10. Space and water

The deliberations of the Committee at its fifty-seventh session on its agenda item on space and water are reflected in its report (A/69/20, paras. 326-334).

11. Space and climate change

The deliberations of the Committee at its fifty-seventh session on its agenda item on space and climate change are reflected in its report (A/69/20, paras. 335-344).

12. Use of space technology in the United Nations system

The deliberations of the Committee at its fifty-seventh session on its agenda item on the use of space technology in the United Nations system are reflected in its report (A/69/20, paras. 345-359).

The Committee will have before it a special report of the Inter-Agency Meeting on Outer Space Activities entitled "Space for global health" (A/AC.105/1091).

13. Future role of the Committee

The deliberations of the Committee at its fifty-seventh session on its agenda item on the future role of the Committee are reflected in its report (A/69/20, paras. 360-376).

14. Other matters

The deliberations of the Committee at its fifty-seventh session under its agenda item entitled "Other matters" are reflected in its report (A/69/20, paras. 377-396).

Composition of the bureaux of the Committee and its subsidiary bodies for the period 2016-2017

The status of the composition of the bureaux for the period 2016-2017 is reflected in paragraphs 29 to 31 of Assembly resolution 69/85.

Membership of the Committee

The Scientific and Technical Subcommittee and the Legal Subcommittee, at their respective sessions in 2015, noted the applications for membership in the Committee (see A/AC.105/1088, para. 11, and A/AC.105/1090, para. 10). The Committee will have the applications of El Salvador, Israel, Oman, Qatar, Sri Lanka and the United Arab Emirates before it for consideration.

2018 "UNISPACE+50" theme of the Committee and its subsidiary bodies

The Scientific and Technical Subcommittee and the Legal Subcommittee, at their respective sessions in 2015, considered a note by the past, present and incoming Chairs of the Committee on the Peaceful Uses of Outer Space. They agreed to the main proposal made in that note and requested the Secretariat, in close consultation with the past, present and incoming Chairs, to develop that proposal in further detail and to present it in the six official languages of the United Nations for consideration by the Committee at its fifty-eighth session (A/AC.105/1088, annex I, paras. 3 and 4, and A/AC.105/1090, paras. 233-234). The Committee will have before it a note by the Secretariat with a more detailed proposal in document A/AC.105/L.297.

Annex

Indicative schedule of work of the Committee on the Peaceful Uses of Outer Space at its fifty-eighth session[a]

The schedule of work laid out below is a general guide to the dates and times when items will be addressed during the course of the session. The consideration of all items can be advanced, extended or delayed, depending on the requirements of the members of the Committee on the Peaceful Uses of Outer Space and any organizational constraints faced during the course of the session.

The Scientific and Technical Subcommittee's Working Group on the Long-term Sustainability of Outer Space Activities will have the possibility of meeting during the fifty-eighth session of the Committee on the Peaceful Uses of Outer Space, with interpretation services, as agreed by the Committee at its fifty-seventh session (A/69/20, para. 394).

Date	*Morning*	*Afternoon*
10-12 June 2015		
Wednesday, 10 June	*Item 1.* Opening of the session *Item 2.* Adoption of the agenda *Item 3.* Statement by the Chair *Item 4.* General exchange of views	*Item 4.* General exchange of views *Item 5.* Ways and means of maintaining outer space for peaceful purposes *Item 6.* Report of the Scientific and Technical Subcommittee on its fifty-second session Technical presentations
Thursday, 11 June	*Item 4.* General exchange of views *Item 5.* Ways and means of maintaining outer space for peaceful purposes *Item 6.* Report of the Scientific and Technical Subcommittee on its fifty-second session Technical presentations	*Item 4.* General exchange of views *Item 5.* Ways and means of maintaining outer space for peaceful purposes *Item 6.* Report of the Scientific and Technical Subcommittee on its fifty-second session Technical presentations
Friday, 12 June	*Item 4.* General exchange of views *Item 6.* Report of the Scientific and Technical Subcommittee on its fifty-second session *Item 7.* Report of the Legal Subcommittee on its fifty-fourth session Technical presentations	*Item 4.* General exchange of views *Item 7.* Report of the Legal Subcommittee on its fifty-fourth session *Item 14.* Other matters Technical presentations

[a] At its thirty-eighth session, the Committee agreed that member States would continue to be provided with an indicative schedule of work, which would be without prejudice to the actual timing of consideration of specific agenda items (*Official Records of the General Assembly, Fiftieth Session, Supplement No. 20* (A/50/20), para. 169 (b)).

Date	*Morning*	*Afternoon*
15-19 June 2015		
Monday, 15 June	*Item 4.* General exchange of views	*Item 4.* General exchange of views
	Item 7. Report of the Legal Subcommittee on its fifty-fourth session	*Item 7.* Report of the Legal Subcommittee on its fifty-fourth session
	Item 8. Space and sustainable development	*Item 8.* Space and sustainable development
	Technical presentations	Technical presentations
Tuesday, 16 June	*Item 8.* Space and sustainable development	*Item 10.* Space and water
		Item 11. Space and climate change
	Item 10. Space and water	*Item 12.* Use of space technology in the United Nations system
	Item 11. Space and climate change	
	Technical presentations	Technical presentations
Wednesday, 17 June	*Item 10.* Space and water	*Item 9.* Spin-off benefits of space technology: review of current status
	Item 11. Space and climate change	
	Item 12. Use of space technology in the United Nations system	*Item 12.* Use of space technology in the United Nations system
	Technical presentations	*Item 13.* Future role of the Committee
		Technical presentations
Thursday, 18 June	*Item 9.* Spin-off benefits of space technology: review of current status	*Item 9.* Spin-off benefits of space technology: review of current status
	Item 13. Future role of the Committee	*Item 13.* Future role of the Committee
	Item 14. Other matters	*Item 14.* Other matters
	Technical presentations	Technical presentations
Friday, 19 June	*Item 15.* Report of the Committee to the General Assembly	*Item 15.* Report of the Committee to the General Assembly

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Committee on the Peaceful Uses of Outer Space
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Proposal on the review and consideration of the concept of a United Nations information platform serving common needs in collecting and sharing information on near-Earth space monitoring in the interests of the safety of space operations, and its architectural and programmatic aspects

Working paper submitted by the Russian Federation*

1. The present working paper has been prepared in the context of the continuing discussion within the Working Group on the Long-Term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee on concepts of information support aimed at meeting common needs in the field of safety of space operations and developing procedures for maintaining the informational awareness of States and international intergovernmental organizations of objects and events in outer space.

2. The Russian Federation, having proposed for consideration the basic elements of the concept of establishing a unified centre for information on near-Earth space monitoring under the auspices of the United Nations, as outlined in its working paper A/AC.105/L.290, is of the view that an in-depth examination of the feasibility of a United Nations-centric information hub gathering information on objects and events in outer space from different sources as a tentatively promising means of meeting general needs and aspirations, in particular, the needs of emerging spacefaring States, would be reasonable. The general premise is that the discussion of the virtues that may reside in the potential platform would be without prejudice to the functionality and feasibility of any other forms of developing and leveraging capabilities to support the objective of information-sharing in this area.

* The text of the present document was first made available, in English, as a conference room paper at the fifty-second session of the Scientific and Technical Subcommittee (A/AC.105/C.1/2015/CRP.32).

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3. It may be presumed that a United Nations information platform could potentially be accommodated within the Office for Outer Space Affairs of the Secretariat. Therefore, it would be useful to get a better understanding of the capabilities of the Office in order to correlate the current and prospective status of such capabilities with the requirements of establishing a robust management system to serve the needs of administering and sustaining the operational capabilities of a United Nations information platform. Organizational and technical capacities, which, as the case may be, basically exist, would certainly need to be expanded to add functionality to a range of specific procedures and capabilities. Having familiarized themselves with the requirements for potentially realizing the idea of a United Nations information platform, delegations, it is reasonably expected, would be in a position, acting collectively, to examine prospectively this idea, decide on the issue politically and identify a shared standard of action.

4. It is also presumed that the initial implementation phase of establishing a platform may involve gathering, collating and disseminating information on monitoring space objects and events using information connectivity to interested States and authorized users. It may be anticipated that a beneficial combination of factors would probably make it possible — at a later stage — to conceive a more integral concept of producing enhanced information products and providing advanced services based not only on the gathering but also on the fusion of information received from different sources. Any evolutionary development of the architecture of the platform would be contingent on the results of ascertaining baseline issues and the continuing trends and results of discussions thereon.

5. It would be advisable for the Scientific and Technical Subcommittee, or the Committee on the Peaceful Uses of Outer Space, to seek stewardship by the Office for Outer Space Affairs in a well-reasoned analysis of platform-related issues that are within the purview of the Office, and request it to conduct a feasibility study and present the results thereof to the session of the Scientific and Technical Subcommittee to be held in 2016. Such a study would pertain to the initiation-phase architecture of a platform, including the necessary set of techniques and procedures, and address the following specific issues relevant to the architectural and programmatic aspects of establishing a platform:

(a) The use of existing hardware and, if appropriate, the acquisition and installation of other specialized hardware necessary for running software, storing data and organizing communication;

(b) The use of the staff available at the Office for Outer Space Affairs and, if necessary, the engaging (hiring) of additional staff, for the purpose of operating the platform (including the secondment of experts from States on a temporary basis, in accordance with the procedure established at the United Nations), who possess the skills necessary to undertake the tasks of:

(i) Establishing the platform (creating a data warehouse, creating software for administering the warehouse, creating software for administering data, creating software for ensuring access to data, implementing protocols for information interaction of the platform with the suppliers and recipients of information, organizing the system of data security, creating the web interface, and installing and configuring system software);

(ii) Maintaining the operation of the platform's software (administering the data warehouse, administering the web portal, and administering the security system and system software);

(iii) Ensuring the working interaction of the platform with the suppliers and the recipients of the information (information and technical support service);

(iv) Administering data stored at the warehouse;

(v) Analysing and summarizing data and preparing reports;

(c) The use of information protocols ensuring the interaction of the platform with the suppliers and recipients of information, based on the internationally applied standard solutions on software and hardware as well as on the approaches to providing each type of information in accordance with existing international standards and recommendations;

(d) The creation and maintenance of the platform's web portal within the existing website of the Office for Outer Space Affairs;

(e) The organization of data storage using, if possible, the technologies already applied at the Office for Outer Space Affairs;

(f) The organization of access to the data, including procedures providing for acquisition of data by recipients upon their request, automatic mailing of data by the platform to recipients, and information accessibility for recipients through the web interface;

(g) The organization of the transfer of data to the platform and its recording at the warehouse;

(h) The regulations for the platform's operation;

(i) The conduct of tests and transfer of the platform into operational mode.

6. It would also be advisable to request the Office for Outer Space Affairs to produce clarifications and/or views regarding:

(a) Existing and needed capacities for organizing physical channels for transferring information to the platform (dedicated and/or public, terrestrial and/or satellite, etc.);

(b) The procedure for the development, coordination, approval and implementation of the technical project of the platform (hardware, information model, the logical and physical models of the data, project on a user interface of the data warehouse, protocols on information interaction, and models of data display forms and statistical forms);

(c) Organizational and technical aspects of possible development and adoption of the regulations for the platform's operation, as well as the format and content of an international treaty (operational agreement), with the United Nations and States and international intergovernmental organizations supplying and using information acting as the parties to it.

7. The Russian Federation invites States members of the Committee on the Peaceful Uses of Outer Space to associate themselves with the ideas and proposals

outlined in this working paper so that a consolidated decision may be taken with regard to requesting the above-mentioned feasibility study.

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Achievement of a uniform interpretation of the right of self-defence in conformity with the Charter of the United Nations as applied to outer space as a factor in maintaining outer space as a safe and conflict-free environment and promoting the long-term sustainability of outer space activities

Working paper submitted by the Russian Federation*

- **Issues of the safety of space operations are closely interrelated with the development of guidelines for preventing conflict situations (conflicts of interests) in outer space**

1. The development of guidelines for ensuring the long-term sustainability of outer space activities, in objective terms, sets a new vector in moving towards achieving the goal of highlighting the needs associated with the safety of space operations and the security of space activities in general. Thanks to the ongoing work on these issues, as well as the results of the work of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities, it has largely become possible to create the systemic background that makes it worthwhile addressing all aspects of ensuring such safety and security in greater detail, given that good and useful ideas and proposals, both those already formulated and those being prepared, can be transformed into standards of conduct, provided a common concept, logical implementation approach and the required regulatory capacities exist.

* The text of the present document was first made available, in English and Russian, as a conference room paper at the fifty-second session of the Scientific and Technical Subcommittee (A/AC.105/C.1/2015/CRP.22).

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- **Joint check of the procedure for recourse to, and of the scope of the right of, self-defence in outer space should be appropriately correlated with the task of maintaining outer space for peaceful purposes and should add functionality to potential solutions in this area**

  2. The proposal to consider the legal basis and modalities for exercising the right of self-defence envisaged by the Charter of the United Nations, as applied to outer space, under the priority item on the agenda of the Committee on the Peaceful Uses of Outer Space concerning ways and means of maintaining outer space for peaceful purposes, addressed to the Committee in June 2013 in a working paper submitted by the Russian Federation (A/AC.105/C.1/L.338), has an important meaning that should be interpreted correctly. This initiative does not in any way contradict the fundamental value of preserving outer space as a conflict-free environment; on the contrary, it is aimed at streamlining the logic of studying the interrelationships among all security factors in outer space and designing a joint systemic approach to ensuring such security. It could become an appropriate area for the efforts of both the Committee, which has long been searching for its own identity in defining ways and means of maintaining outer space for peaceful purposes, and its two Subcommittees. This working paper should not be associated with a statement or implication of policy principles or interpreted as necessarily representing, in its entirety, a definitive official position on any particular aspect of the issue addressed. It is, rather, part of the ongoing effort to break the stalemate in the Committee's discussions on ways and means of maintaining outer space for peaceful purposes and to assist in finding opportunities for establishing common criteria to deal with the problem of self-defence in outer space and reaching an agreed and comprehensive understanding of how to avoid the unchecked discretion of States in their interpretation of such self-defence.

- **Interpretative approach to the provision of the Charter of the United Nations on self-defence, as applied to outer space, as an alternative to the practice of departing from that provision**

  3. It can be assumed fairly confidently that some delegations to the Committee on the Peaceful Uses of Outer Space believe that discussing the issue of self-defence in outer space will, in and of itself, call into question the positive identity of contemporary international space law, while others regard any potential international arrangement on this issue as a threat of the establishment of *jus belli* in the space field. Such an understanding characterized by a lack of trust with regard to analysis of the issue of self-defence in outer space needs to be corrected. First, the exploration and use of outer space are regulated by international law on the basis of the Charter of the United Nations. Accordingly, the principle of self-defence does not in itself constitute an exception in this general context. Second, categorically denying the utility of addressing legal and other aspects of self-defence in outer space does not really seem reasonable when the evolving national architecture of security in outer space in a number of cases can hardly be deemed fully consistent with the principles of the Charter of the United Nations. Evidently, self-defence is increasingly being used as a generalized political and technical concept rather than an international legal notion. Consequently, there is a danger that States will not always be inclined to bring their strategies of self-defence in outer space into strict conformity with the provisions of the Charter of the United Nations, a situation which would promote discretionary regulation in this area. What is at stake is not

the advisability of addressing this issue but whether such good cause may be problematic when international policymaking is increasingly determined by geopolitical interests that have a clear extension to outer space activities. That said, States should nevertheless pay particular attention to this issue, take a sober and comprehensive look at it and attempt to make a common judgement on the legal basis and modalities of self-defence in outer space. Doing so would truly demonstrate that States are taking a responsible approach to the use of outer space.

- **Compelling need to pronounce on the situation and preferably work out an understanding based on a consistently formulated and integrated opinion**

4. The Russian Federation believes that the States members of the Committee are capable of identifying positive avenues of cooperation in this sphere that could be focused on reviewing and jointly elaborating political and legal methods to ensure lawful and responsible interpretation of the right of self-defence as applied to outer space and agreeing on a vital complex of objective assessments and conclusions shared by all. It would be useful to understand how the category of self-defence is understood in terms of political and technocratic logic and what could be the consequences of a "free interpretation approach". Ambivalence characterizing interpretations of the substantive aspects of the issue of self-defence in space is revealed in the associations developed and the conclusions reached by academia, as well as in the diverging national regulations in this sphere. There is no certainty that the core self-defence criteria according to the Charter of the United Nations are being followed in the framework of national policy documents and will be properly considered in practice. The international community needs a set of tools to solve the issue of maintaining outer space for peaceful purposes. Accordingly, the self-defence issue should be given careful thought by the Committee. The maintenance of basic standards in the sphere of law and security should include the function of a qualified interpretation of the principle of self-defence in outer space in full conformity with the basic tenets of international law, enshrined first and foremost in the Charter of the United Nations.

- **General vision of results sought**

5. In considering the particularities of a hypothetical use of a right of self-defence in outer space, the aim would be to prepare, in a multilateral format, a conceptual approach reflecting the balance of views and interests that surely exists in this sphere and is not to be neglected. It would also be useful to elaborate and, ultimately, adopt regulations (even if non-binding regulations) that would, as far as their concept allows, narrow down the prerequisites and grounds for random, biased and politically motivated interpretations of the principle of self-defence as applied to outer space, thus providing baseline "safeguards" and mechanisms to prevent critical risks. Considered as a whole, the task should be to devise methods of adequate and proportionate response to situations in outer space that are not ordinary in technical and legal terms.

- **References to self-defence in international practice and in national doctrines**

6. References to the right of self-defence provided by the Charter of the United Nations are not rare in international treaties. For example, the still-valid Agreement between the United States of America and the Union of Soviet Socialist Republics

on the Prevention of Nuclear War of 22 June 1973 stipulates that it is without prejudice to the inherent right of self-defence in accordance with Article 51 of the Charter of the United Nations. It is presumed that, in making such reservations in international treaties, States undertake full responsibility for making a perfectly right decision on the existence of a legal basis for considering any given situation as justifying practical self-defence. The right of self-defence appears in the draft treaty on prevention of the placement of weapons in outer space, in the code of conduct for outer space activities and also in a number of national doctrines on outer space activities. The doctrines of various States are characterized by associating self-defence not only with Article 51 of the Charter of the United Nations but also with customary international law and with the rules of behaviour in this sphere that have presumably evolved in international practice and are considered legally binding by those States. Thus, it would be useful to gain an overview of concepts that are typical for certain countries and that justify the use of self-defence in the event of "imminent danger/urgent necessity". It should be noted that such notions are not employed in the Charter. The circumstances invoked require elaboration of a common understanding of how the right of self-defence could be realized in outer space in a hypothetical scenario. Otherwise, different interpretations of the legitimacy and mechanisms of such a right in specific circumstances would only increase threats in the case of incidents and conflicts of interests in outer space. Such incidents and conflicts do not necessarily have a military character — they may be caused by a malfunction, wrong decisions due to lack of information or specific competition factors. On such occasions, States and their policymaking establishments, when reacting to a particular negative situation in outer space, may adopt decisions that are not completely appropriate from the point of view of proportionality of reaction. To leave the problem of interpretation of the right to self-defence unresolved would only serve to increase potential risks of trouble in outer space that cannot be completely excluded.

- **Dominance in outer space holds sway over some national doctrines**

7. The Charter of the United Nations contains quite clear criteria for understanding the general idea, modality and functions of the concept of self-defence. Nevertheless, the evaluation criteria that may be used by States to decide whether there are grounds for exercising the right of self-defence as applied to outer space may vary in each individual case, depending on the system of national interests and priorities that are formed largely on the basis of national political culture. There is therefore a divergence of the principles and maxims applied in interpreting such right of self-defence and, accordingly, of approaches and technical decisions that are being elaborated, planned and realized on the basis of national policy documents and that add strategic content to self-defence as a political principle. Some of these documents indicate an expanded interpretation of self-defence to include preventive actions (even though preventive self-defence is not permitted under the Charter of the United Nations). They also suggest that the proportionality that should be included in the range of restrictions on realization of the right of self-defence is not always properly presumed. There are cases of legitimization of the use of the right of self-defence in the absence of an armed attack (prior to the development of circumstances associated with an armed attack). The operational and strategic components of a number of doctrines provide for a broad range of measures and activities based on an absolute interpretation of

preventive/anticipatory self-defence. Such doctrines suggest that, firstly, the self-defence function, its "technical" meaning and, accordingly, the tactics, motivation and legitimacy of involving coercive measures are largely defined by national policy documents and, secondly, self-defence perceptions, being susceptible to change (due to political and other reasons or evolutionary development), do not in fact allow adherence to the principle of a unified interpretation of self-defence and do not ensure the vitally important stability and clarity of this norm of the Charter of the United Nations as applied to outer space.

- **Non-use of force and self-defence**

8. The interpretation of the principle of self-defence in its extrapolation to the domain of outer space needs to be dealt with collectively and reasonably so that this area does not remain a "zone of reticent comments". The ultimate goal of such efforts would be to clarify all the parallels and interactions between this principle and the equally universal principle of the prohibition of the threat or use of force. A straight statement of the issue of applying the above two universal principles of international law and establishing a clear correlation between them would seem to offer an opportunity to reach a common understanding of what should be the pattern of behaviour and the logic of actions for States, and which considerations and ethical standards they should be guided by in this sensitive area. Such an understanding — if it took the form, for example, of potential guidelines dealing specifically with this subject — would play a definite practical role in the frame of reference of real politics, thus preventing States from falling into a system of contradictions and disproportionate reactions to possible crisis situations. It could also help ensure that existing and future concepts of the use of space approved at the national or international levels (in the context of bloc/allied relations) that vest States with discretionary functions and powers do not acquire a dangerous "autonomous" dimension divorced from the fundamental principles, laid down by the Charter of the United Nations, which regulate lawful use of corrective and enforcement action. Such a common understanding would preserve the fundamental premise that there can be no reasonable alternative whatsoever to the system of international law and that legal means should take absolute priority over political considerations.

- **References to self-defence in current initiatives pertaining to security in outer space**

9. As noted above, the draft treaty on prevention of the placement of weapons in outer space and code of conduct relate to the topic of self-defence. A radical difference between the two documents lies in the context of references to self-defence. In this sense, they take different or in fact opposite approaches to self-defence. The draft treaty on prevention of the placement of weapons in outer space sets out legally binding rules; their implementation, within the proposed legal regime (outer space without weapons), would ensure the ban on the placement of weapons in outer space and on the use or threat of the use of force against space objects. The draft treaty on prevention of the placement of weapons in outer space contains a clause stating that its provisions shall be without prejudice to the right to individual or collective self-defence, in accordance with Article 51 of the Charter of the United Nations. The implementation of the treaty would significantly narrow incentives to the hypothetical exercise of the right of self-defence. The draft code of

conduct provides for a much broader exercise of the right of self-defence. The way this principle is supposed to be "activated", according to the document, raises serious concerns. The intrigue lies in the provisions of the draft code of conduct that stipulate that subscribing States shall refrain from any action that might bring about, directly or indirectly, damage to, or destruction of, space objects unless such action is motivated, other than by the Charter of the United Nations (including the right of self-defence), by the interests of reducing space debris or by imperative safety considerations. In addition, of key importance is the fact that the document does not specify whether such an intention of States concerns their own space objects or foreign ones as well. It turns out that, in actual fact, it is entirely a question of reserving the possibility of using coercive measures, including for the "good cause" of reducing space debris, without obtaining the consent of a State which exercises jurisdiction and control over space objects in accordance with international space law. As a result of such legitimization, unauthorized measures may essentially cease to be considered an international wrongdoing. In the context of prioritizing within the framework of the draft code of conduct, the factor of self-defence ceases to be an exception to the general procedure of ensuring security, which is based on the non-use of force, and becomes part of some kind of new foundation for taking coercive measures in outer space. An assessment is needed — in relation to the Charter of the United Nations and other universally recognized principles and norms of international law — of the adequacy of the proposed approach and the desire to establish a kind of right to take actions which may have "the effect of the use of force". Such "reconstructions" of the basic norms of international law can reasonably be regarded as conflict-provoking.

- **Reinterpretations of international law to fit policy**

10. In a general legal sense, the concept of a "code" is associated with a systematically structured set or systematically organized review of regulations or with a set of existing laws, together with an unwritten law pertaining to a specific issue, that form an integral regulation system. Assuming that the draft code of conduct will to a large extent have the status attributes of a fundamentally new set of rules (including by comparison with the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies), the scheme for the exercise of the right of self-defence provided for by that document (together with a greater emphasis on practising coercive measures under other pretexts) and for making self-defence a common option objectively calls for careful analysis. Such models and concepts for creating — on the basis of a rather specific understanding of the relationship between the categories of legality and expediency — a new architecture of "constructive interventionism", formally dictated by reasons of safety of space operations, will lead (by way of response) to the development, in the framework of national doctrines of outer space activities, of concepts of extended deterrence, with more active forms of counterforce planning aimed at entailing high risks for unauthorized supra-jurisdiction actions against foreign space objects. An expanded positioning of coercive measures, which is characteristic of the draft code of conduct (when coercive measures in self-defence and similar measures dictated by considerations of reducing space debris are treated as equivalent to each other in one and the same context), will quite predictably contribute to fostering the tendency to blur the line

between the actual case of self-defence and other essentially unrestricted manifestations of approaches based on the use of force.

- **Coherence in terminology**

11. Rational decision-making modes in the area under consideration make it necessary to resolve the issue of terminology, which clearly has a tendency to develop fairly chaotically. Clarification is needed of a number of notions which are used both in the framework of the existing international space law and more broadly, for example, in the draft code of conduct, as well as in national policy documents on outer space. Important aspects of studying problems that exist in this area are related to such categories as "harmful interference", "hostile interference", "prohibitive interference", "malicious impact", "hostile events", "interference", "attempt to interfere", and "state of danger/tension/threat". For instance, the term "harmful interference", which is quite appropriate in the framework of the general political guidelines stipulated in article IX of the 1967 Outer Space Treaty, acquires a different meaning in the draft code of conduct because harmful interference is actually posited as a reason for unauthorized supra-jurisdictional coercive measures against foreign space objects. Obviously, this concept, which is not elaborated in detail in the fundamentally different context, would predictably be interpreted in different ways depending on the circumstances. The task of developing workable standard definitions is also relevant to the work on the long-term sustainability of outer space activities.

- **Substantive conditions for resorting to self-defence**

12. Qualifying any behaviour (action) of a State as self-defence primarily involves the problem of interpretation and application of Article 51 of the Charter of the United Nations and other provisions thereof that form the system for maintaining international peace and security. In connection with outer space activities, this problem should also be considered directly in relation to the principles and norms of international space law, taking into account "strong" points as well as a certain incompleteness of the legal regime on outer space. The right of self-defence according to the Charter of the United Nations specifies a potential and real possibility of a sanction in response to an armed attack against a State. This sanction is to be implemented through actions objectively connected with the counter-use of force. Article 51 of the Charter provides for the most dangerous threat to the existence of a State, that is an armed attack, being grounds for recourse to self-defence. In this case, self-defence as a legitimate coercive measure should be interpreted, essentially, as an exception to the general prohibition of the use of force or the threat of force and simultaneously as a means to secure the norm to refrain from the use of force in the form of an armed attack. In any case, self-defence should be a follow-up to a wrongful act on the part of another State. In formal legal terms, there is no intermediate stage between an armed attack and the use of the right of self-defence: a State can immediately react in its own defence in the form of self-defence. The history of the drafting of the Charter, including records of the relevant negotiations, testifies that it was supposed at that time that the right of self-defence may not occur prior to an armed attack.

- **Sovereignty and sovereign rights**

13. Beyond the characteristics stipulated by the Charter of the United Nations concerning illegal use of military force when such act threatens the territorial integrity or political independence of a State, the sovereignty of a State also appears in the definition of aggression adopted by the United Nations General Assembly (resolution 3314 (XXIX)). This is completely logical because territorial integrity and political independence may become targets of wrongful acts or be threatened by such acts precisely as a result of encroachment on sovereignty, i.e. the full authority of a State over its own territory. Although there is no complete list of criteria to determine the prohibition of the use or threat of use of force in international relations, the Charter stipulates that States should refrain from the threat or use of force not only against the territorial integrity or political independence of any State but also in any other manner. Such an important reservation obviously includes any actions preventing the exercise of sovereignty. The notion of sovereignty is naturally and inherently connected with the notion of sovereign rights that derive from the essence of sovereignty and denote the specific rights of a State to extend its power over the objects or actions of individuals and legal entities not only within its territory but also outside it, as should be specifically stipulated by international treaties. One of the sovereign rights of a State consists in exercising jurisdiction and control over space objects according to the norms of international space law. Attention should be paid to the fact that such a notion as "sovereign potentials" in outer space is encountered in national space doctrines. The prohibition of the use or the threat of use of force according to the concept stipulated by the Charter of the United Nations extends, inter alia, to actions aimed at preventing (restricting) the exercise of sovereignty. Although an intimate connection between sovereignty and derivative sovereign rights is not in doubt, the view is expressed in international legal doctrine that it would be mistaken to identify the exercise of sovereign powers with sovereignty itself. It would be fundamentally important to clarify whether States hold the view that restriction of their sovereign rights in the case of unauthorized negative influence on their space objects or destruction of such objects means, in precise terms, encroachment on the sovereignty of those States, resulting in a situation whereby the exercise of sovereignty is prejudiced.

- **Threats in information space**

14. The task of clarifying legal grounds for actions by way of self-defence as applied to outer space is objectively related to the problem of the study of international legal aspects of conflicts in information space and the potential adaptation of existing and development of new principles and norms of international law (including humanitarian law) as applied to information and communications technology (ICTs) and related infrastructure. This refers to unauthorized and/or malicious impacts involving ICTs and affecting information and communication networks and information transmitted via such networks, which represent a core integral part of the management of key infrastructure objects — not only military objects but also objects containing dangerous forces (according to the concept formulated in international humanitarian law). Relevant issues related to objects that form and service satellite constellations will require special consideration. Generally recognized criteria for identifying important characteristics of the concept of "confrontation" in this sphere have not yet been established. It is not clear whether it is actually possible, and under what hypothetical conditions, for special

actions/operations of the relevant type and intensity with the use of ICTs to fall within the categories of "use of force" and "armed attack" under the Charter of the United Nations. It is yet to be clarified how to define the threshold of harm such that going beyond that threshold would, first, mean changing the status of malicious actions (confrontation) in this sphere into that of military (armed) conflict and, second, make it possible to regard the relevant actions/operations as a "use of force" or "armed attack" or "act of aggression". The international community has not come up with complete solutions in this area. Information and telecommunications space (understood as the outer space information systems/means whose functioning and standard operation procedures may be influenced by the use of ICTs) is already considered not only within the expert community but also officially, in the context of some policy objectives, as being one of the areas of warfare. However, a general concept of "military/armed conflict in information space" has not yet been developed. Given that the phenomenon is a relatively recent one, the parameters of resisting attacks involving ICTs are not regulated by international treaties, and relevant international legal practice has not yet been established. Nevertheless, there exists a precedent-setting decision to recognize, at the national level, information space as one of the areas of warfare, along with ground, sea, airspace and outer space and, consequently, to substantiate the right to use armed force in response to an impact involving ICTs. There is also a discernible tendency to place the emphasis on applying the same norms of law in this area as in any other and, consequently, to permit the conduct of operations with the use of force in response to an attack. Drawing up a typology of actions which could, in a preliminary way, be qualified as "aggressive actions in information and communications space pursuing military purposes" will need attention as a separate major problem with a real application to outer space. This refers to situations connected with purposeful interference in space radio links that exceeds levels permitted by the Radio Regulations of the International Telecommunication Union and leads to the disruption of normal functioning of spacecraft; gaining unauthorized access to radio links and on-board control systems of spacecraft; and undertaking intended actions that impede the use of information transmitted from spacecraft. Information is key to ensuring the safety of space operations (the domain of ensuring the long-term sustainability of outer space activities) and devising effective measures to preserve outer space as a peaceful and conflict-free environment. In any context, if the needs in this area are evaluated in their totality, the aim is for international regulation to provide adequate guarantees for: security of channels of communication interaction (exchange of information in the interests of safety of on-orbit operations); security of spacecraft control systems (understood not only as implying implementation of design and engineering solutions but also as a set of procedures agreed by States and aimed at preventing malicious influence); and completeness, reliability and timeliness of transfer of information on objects and events in outer space (not only for safety reasons but also to prevent potential conflicts that arise from misinterpreting situations resulting from technical breakdowns or equipment failures).

- **Merging of military, civil and entrepreneurial activities**

15. Outer space was not initially considered an area of application of the international law that is used in armed conflicts and imposes restrictions on applying means and methods of armed combat. Rules set in this branch of the law include, among other things, a differentiation of military facilities from non-military

facilities. As for international space law, the 1975 Convention on Registration of Objects Launched into Outer Space does not require space objects to be characterized from the point of view of their military or civil purpose. There is no common practice of registering space objects indicating their military nature: not all States identify the purposes of space objects launched by them. It should be taken into account that, in practical terms, defining separate categories of space objects may be complicated, considering the dual use of many of them, the increasing pattern of launching space objects with a declared civil purpose with hosted payloads of a military nature, as well as the new, unprecedented tendency for private companies and military agencies to co-finance the development and operation of space objects. Thus, it is practically impossible to make the status of certain space objects subject to special legal regulation. In relation to space activities, it is basically highly questionable to apply a "selective approach" to civil and military objects, since in outer space a potential conflict can escalate immeasurably faster than in other areas. This proves that, in relation to outer space, a comprehensive solution to the problem of safety and security should be sought in another dimension through realizable and functional decisions. For example, in the light of United Nations General Assembly resolution 62/101 (on enhancing the practice in registering space objects) and the formally existing consensus concerning the feasibility of initiating practical steps to achieve the objectives declared therein, some countries will have to make a decision to re-evaluate their practice of not furnishing information about the location of objects in outer space by the time they enter operational orbit.

- **What is the future role for proxy actors?**

16. In accordance with the Charter of the United Nations, prohibition of the use of force applies to international conflicts in which parties are subjects of international law. In this connection, it is necessary to understand what would be the status of those non-governmental entities (and their assets in space) that act as proxy actors in the interests of, with the knowledge of, and/or under instructions from States in the event of a hypothetical conflict or conduct of activities that do not meet the legitimacy criteria. Although the 1967 Outer Space Treaty provides that activities of non-governmental entities in outer space shall be authorized and continuously supervised by the relevant State Party to that Treaty, it would be appropriate to consider the grounds for rendering qualification to certain types of action that are carried out by such non-governmental entities (in particular with the aid of space objects belonging to them or managed by them) and may require reciprocal actions, including in self-defence. In this sense, a disorienting regulatory system may arise if a certain number of States adopt the Code of Conduct containing provisions addressed above. Obviously, making unauthorized supra-jurisdictional impacts on space objects under any ownership and jurisdiction a policy instrument, as postulated by that document, will quite possibly be ensured, inter alia, by precisely such proxy actors (the draft code of conduct even makes reference to some unidentified established actors in the field of safety of space activities). The thesis promoted by some delegations to the Committee on the Peaceful Uses of Outer Space concerning the need to ensure direct access to national (public and private) operators of space objects for foreign entities dealing with security in space "fits perfectly" into such a system of relations. In this context, it should be borne in mind

that some national space doctrines assume that non-State entities may represent a "potential adversary" in outer space.

- **Need to uphold the virtues of, and provide, in full measure, continuum with, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques**

17. The sustainability of the space technosphere is in no small degree determined by space weather factors. Changes in space weather, including those due to deliberate intervention, can lead to loss of functionality of a space object. For this reason, strict adherence to the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, which was opened for signature on 18 May 1977 and entered into force on 5 October 1978, is essential. As technology advances, it is important to ensure stability and clear application of norms under the Convention and interpretation of the Convention in all required restrictive senses. To be confident of the fact that the problem of eliminating a targeted negative impact on near-Earth space has a convincing solution, the interlinkage would have to be established between the guidelines for ensuring the long-term sustainability of outer space activities (in part relating to space weather issues) that are being developed and the Convention and its implementation mechanism, which together constitute a trusted regulatory framework. In the context of the guidelines, it would be important to uphold the virtues of, and reaffirm strong adherence to, the Convention and to give an indicative list of actions that cause or could cause damage to the space environment within the meaning of the Convention. Such efforts would be in line with the common desire to eliminate any random and careless practices not only by States but also by the widening circle of "new space actors".

- **Non-idle questions and non-abstract speculations on the topic**

18. In connection with the above, it would be appropriate to consider some situational scenarios using well-defined analytical and analysable technical, political and legal categories. It is necessary to identify, on the basis of measurable objective criteria, central issues which could be analysed as part of various cycles of work on the topic of self-defence in space. The first step towards developing a detailed approach to international legal aspects of self-defence in space could be to list basic questions, such as the following:

- Is it possible, for the purpose of better defining the legal grounds for self-defence in outer space, to distinguish, in principle, between the two situations — a conflict situation in outer space as a continuation of an armed conflict on Earth and a conflict situation in space as an independent (separate) phenomenon?

- What would be the nature and characteristics (including severity) of a violent act that could be regarded as an armed attack, such that the right of self-defence with respect to outer space could be legitimately used (realized)? What actions of a technical nature could make it possible to qualify a violent act as an armed attack?

- Are States ready to adhere to the understanding that the threat of an attack on a space object which is under the jurisdiction of another State, or the threat of

implementation against such an object of coercive measures not related to the use of force, entails the international liability of the wrongdoer but does not provide legal grounds for exercising the right to self-defence? Given the duty of States to refrain from reprisals associated with the use of force, which other types of reprisals may be carried out in the context under consideration, and how can their legitimacy, nature and conditions for implementation be assessed?

- What is the concept of force and how it evolves in relation to the domain of outer space, taking into account modern technological capabilities, including in the military sphere (potential for not "military" but purely technological operations/activities that can create a "weapons effect" and a "use of force effect")?

The classification of an offence (entailing a sanction in the form of coercion) either as an international crime (act of aggression) or as an international wrongdoing, as well as the definition and implementation of algorithms for influencing and managing crisis situations in outer space, would be contingent on the answers to these questions.

- **Advisability of approaching security realities with due prudence and on a rational basis**

19. The annex to this working paper contains a table which makes it possible to rationally streamline and make orderly the observations on the topic of security in outer space and to bring a measure of systematic order to the analysis thereof. Considering the aggregate of pertinent issues in the proposed perspective will make it possible to focus primarily on obvious aspects of outer space security which are implied in the discussion of, and would be conclusively necessary to be factored into, the concept of ensuring the long-term sustainability of outer space activities. It may be expected that a rational order will thus be infused into the consideration and ascertainment of a structure, threshold criteria and ways and means of countering risks and threats of contingencies which are not directly or predominantly linked to the problem of man-made space debris and which may be a result of certain intentional actions into outer space. The types of activities in question are those conducted in outer space which, as practice shows, are carried out by certain States on quasi-legal grounds or on the premise that such activities are not circumscribed by international law. More precisely, these are the practices associated with non-public (referred to as "clandestine" in some doctrines) operations in outer space, which may affect space objects under foreign jurisdiction and/or control. As part of such operations, actions aimed at tracking and/or influencing events in outer space are carried out. Some of these actions may represent episodes only; others may be of a more persistent nature. Usually, such activities are based on concepts of achieving supremacy in outer space (as interpreted by specific States). Such supremacy is envisaged as being mainly achieved by creating the capacity for adversely affecting foreign space objects. Thus, conditions are created in reality for justifying the admissibility of impeding space operations carried out by other States. There are examples of "measured" practical interference with the operation of systems under foreign jurisdiction and control, namely activities which are not accompanied by overwhelmingly aggressive manifestations. Consequently, an attempt should be made to demarcate differing situations and scenarios conditioned

by such types of actions, and assign to each of them a set of plausible and rational actions aimed at mitigating risks and threats. Such demarcation would fulfil, for political actions, the highly important function of, inter alia, forestalling any adverse development of the situation in outer space. A potentially wide outreach of the topic of space security issues in its expanded format would be unprecedented in the context of international relations. Focusing work under this topic on the development of guidelines rather than defining recommendations and ideas would be warranted in practical terms. The Committee could make its own special contribution to defining the best way of converging the experience being acquired within different forums engaged in work on space security matters and its release into policy in the form of practical and sufficiently effective space security safeguards. Regardless of the prospects for achieving consensus within the Committee on the need to analyse space security issues more thoroughly in the way indicated above in this paragraph, it is necessary to try to include, at least at a minimum required level, some of their aspects in the concept and guidelines for ensuring the long-term sustainability of outer space activities. If general agreement is reached, it will be possible to study the issue of developing a separate dedicated instrument (in the form of an understanding, guidelines or articles) which could provide additional mechanisms for exerting, through a set of positive responsibilities, a moderating and restraining influence on certain activities that could potentially (predictably) be capable of provoking conflicts. As headway in the two above areas is made, it will become clear whether the issue of self-defence in outer space is susceptible to collective uniform interpretation.

- **Charting the way to addressing those aspects of the long-term sustainability of outer space activities that relate to space security**

20. As of February 2015, the draft guidelines for ensuring the long-term sustainability of outer space activities that relate to safety of space operations are distinctly less persuasive as compared to the tasks facing the world community in this area. This mismatch should be eliminated. The working papers submitted by the Russian Federation give a rather detailed description of added elements and features of the concept and guidelines for ensuring the long-term sustainability of outer space activities. In order to show the existing objective interlinkage between factors involved in ensuring the long-term sustainability of outer space activities and space security, the Russian Federation submits, for consideration by the Scientific and Technical Subcommittee, the text of a potential guideline (in original versions in English and Russian). Although such a regulation model would not create special legal regimes providing for comprehensive solutions, the approaches adopted in the draft guideline could serve to determine, in the foreseeable future, an international baseline level for implementing the required safeguards when carrying out space operations.

Draft guideline

Implementation of operational and technological measures of self-restraint to forestall adverse developments in outer space

As part of defining, validating and supporting their space operations' tasks and requirements and space security-related guidance, operational principles and procedures, as well as identifying and employing appropriate capabilities in

establishing and satisfying the needs in this area. States and international intergovernmental organizations should ensure that their related governmental agencies and establishments, respectively, as well as involved non-governmental entities under their jurisdiction and/or control, have a basic awareness of the need to align the objectives sought and the means employed by them with criteria and requirements attributable under international law, including the principles and norms of the Charter of the United Nations and the provisions of article IX of the 1967 Outer Space Treaty, and should make sure that such operations do not foster conflicts of interests and are not intrusive with regard to foreign space objects, unless such interference is expressly agreed to by the States or international intergovernmental organizations that exercise jurisdiction and/or control over them.

In undertaking space operations with a view to gathering information to acquire insight into objects, events and situations in near-Earth space orbit through required general surveillance and monitoring, which may presumably involve approaches at relatively short distances and flybys in close proximity compromising the safety and security of foreign space objects, States and international intergovernmental organizations should elaborate practical and effective safeguards to forestall adverse developments by restricting discretion in the use of techniques and selecting alternatives that would best satisfy the safety and security needs of foreign space objects.

To avoid the development of tensions or situations in outer space that could necessitate appropriate responses potentially involving procedures under Articles 2, paragraph 4, and 51 of the Charter of the United Nations, States and international intergovernmental organizations, by taking full cognizance of limitations derived from international law and related internationally recognized standards to be followed when assessing and/or directing actions in outer space, should, as a general rule, refrain from applying to foreign space objects methods and techniques that they themselves would not deem pertinent and/or acceptable as applied to their own space objects.

States and international intergovernmental organizations, especially those that have relevant capacities and practices, should annually file with the Office for Outer Space Affairs of the Secretariat valid statements and, as necessary, supplements/updates thereto, containing, in a generalized form, their assessment of the situation in outer space from the perspective of strategic considerations as well as characteristics (as detailed as they deem necessary) of the status of near-Earth outer space as an operating environment: specifically, phenomena and events which influence the security of outer space and should be comprehensively considered in evaluating threats and hazards for space activities.

- **Approaches to shaping the information environment**

21. Jointly defining the range of risks and threats that occur or can occur in outer space would promote endorsement of a basic understanding of ways and means of preventing them. Modelling responses to highest-priority risks and threats acquires particular importance. Such work would help to better understand how to ensure the conditions for the response to be adaptable to risks and threats in practical and international legal respects, and to ascertain what would be the main and backup response modes. Issues that are topical for the regulation of the safety and security of space activities cover a broad spectrum. Many of them (e.g. those related to

special actions with the use of ICTs) have not been sufficiently studied and remain predominantly outside international legal assessment. The situation in the near-Earth orbit is the result of the complex interaction of all kinds of factors conditioned by possible intentional influences on space objects, by space weather and space debris influence, as well as by technical failures due to technological imperfection. Most countries do not have the technology to effectively monitor the constantly changing situation in orbit. As a consequence, they are constrained in choosing acceptable and reasonable solutions. New approaches should be applied in the information sphere to advance the integration of all necessary information in one single complex that is useful in terms of functions for the purposes of maintaining stability in outer space. The unified centre for information on near-Earth space monitoring proposed by the Russian Federation for establishment under the auspices of the United Nations would be capable of introducing the necessary changes to the existing informational and operational paradigm and providing the international community with the fullest possible aggregate perception of a situation in outer space. Concerting efforts in this direction could give rise to a dedicated political process of reinforcing confidence and predictability in outer space with the emphasis on collective security sustainment capabilities and procedures.

- **Concluding comment**

22. States members of the Committee, acting on a specified platform with the help of agreed instruments and consistently creating ever-expanding points for a political dialogue, could collectively promote agreement on basic views on relevant aspects of security and stability in outer space, having thought through and foreseen modalities or even a "roadmap" of solutions to vital issues essential for predetermining the stability of the system for preserving peace in this sphere in the security environment of the twenty-first century. The opportunities are there to come to an agreement and, ideally, to act as partners in this sphere. Given interest, those opportunities can and must be realized. The forthcoming 50th anniversary of the 1967 Outer Space Treaty could give a sense of direction for drafting and, possibly, adopting a relevant joint instrument.

Annex

Tentative classification of situations in outer space that may provoke conflicts

<table>
<tr><th colspan="3">I. GENERAL DESCRIPTION OF SITUATIONS</th></tr>
<tr><td colspan="2">Situations, or preconditions for the creation of situations, that are not connected with extreme events and critical conditions but can impel the suffering party (party affected by such events and conditions) to take response actions (remedial or more active); such situations may result from coincidence or be triggered by "unfriendly" actions aimed either at gaining, including through "mediator actors", competitive advantages, or at conducting activities with the purpose of tracking and/or influencing events in outer space.</td><td>Extraordinary (in technical, political and/or international legal terms) situations, in which a space object and/or related infrastructure experiences critical or near-to-critical unauthorized external impact.</td></tr>
<tr><th colspan="3">DETAILED DESCRIPTION OF SITUATIONS</th></tr>
<tr><td>Separate instances of performing short-duration actions with respect to foreign space objects that do not appear to testify to an intent to advance or risk a conflict, and may, in particular, include:
- approaching a foreign space object at a close distance with no intention of exerting physical impact, for example, with the purpose of "inspection" (unauthorized collection of information);
- creating interference in the space radio links of a foreign space object that exceeds thresholds set by the norms of the International Telecommunication Union, without causing a serious disruption of the functioning mode;
- placing a significant amount of extra small (poorly tracked by monitoring facilities) space objects in intensely used areas of near-Earth space.
Such actions lead to relatively insignificant complications in operation.
There is also a possibility of separate instances of unexpected (unpredicted) developments related, in particular, to:
- system failures and breakdowns (caused, inter alia, by perturbations of space weather) and, as a result, loss of control over a space object or loss of the ability to receive information from a space object;</td><td>Established (technically confirmed) persistent/long-duration "unfriendly" actions, resulting in the limitation of a space object's functioning capacities.</td><td>Rigid and deliberate aggressive/ malicious actions, after which the conflict takes/may take the form of confrontation.</td></tr>
</table>

- inadequate assessment of technogenic risks in near-Earth space.		
2. ACTIONS LEADING TO THE SITUATIONS		
Actions which can potentially hinder the normal operation and use of a foreign space object and/or its related infrastructure: - approaches to a foreign space object and presence in dangerous proximity to it; - placement of own space object near a foreign space object and the use of the same radio frequency band in violation of arrangements (protocols) resulting from coordination between telecommunication administrations; - unintentional provision of unreliable information on objects and events in near-Earth space.	Actions hindering normal operation and use of a foreign space object and/or its related infrastructure: - modification of the space environment by means of generation of electromagnetic radiation, dispersion of aerosols and through the use of other means; - intentional provision of unreliable (misleading) information on objects and events in near-Earth space.	Actions preventing the normal operation and use of a foreign space object and/or its related infrastructure: - physical (kinetic or other) impact; - use of special information and communication technologies (e.g. seizure of control of a foreign space object, use of software and hardware to affect functional state and functional characteristics of a space object).
3. TECHNICAL IMPLICATIONS OF THE SITUATIONS		
Deterioration in the performance of a space object: - reduced operational lifetime of a space object; - impossibility of receiving information from the space object; - temporary suspension of the use of ground-based systems for controlling a space object; - loss of operational capability of a space object.	Deterioration in the performance/ incapacitation of a space object, infliction of considerable damage to its operation: - significant shortening of operational lifetime of a space object; - serious deterioration of functional characteristics; - impossibility of receiving information from a space object; - long-duration suspension of the use of ground-based systems for controlling a space object; - inoperability of a space object.	Failure in operation (irretrievable loss) of a foreign space object and/or its related infrastructure. Chaotization of the situation in outer space, including (as a result) a sharp increase in the amount of space debris.

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Considerations regarding the modalities for consolidating understanding on issues of enhancing the practice in the registration of space objects in view of the need to ensure the safety of space operations

Working paper submitted by the Russian Federation*

1. This working paper has been prepared with due appreciation for, and without prejudice to, the outcomes of the comprehensive review and analysis of the practice of States and international organizations in registering space objects undertaken and successfully completed in 2007 by the relevant Working Group of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space. It should not be regarded as retrospection or a reproduction of previous deliberations on seemingly resolved issues; rather, it is an invitation to discuss delicately, but consistently, the problems hampering the implementation of ideas on better regulation in the area of registration and develop a functional approach to eliminating those problems.

2. Work on the concept of, and guidelines for, ensuring the long-term sustainability of outer space activities highlights the issue of determining ways and means of making the situation in the near-Earth orbit significantly more predictable and opens up new opportunities for dialogue on various aspects of registration. In this regard, the range of issues that would have to be resolved is wide. In principle, many of those issues are directly related to raising the level and quality of mutual informational awareness of objects and events in near-Earth outer space. In this context, the topic of increasing the efficiency of the implementation of the 1975 Convention on Registration of Objects Launched into Outer Space continues to be significant. Having prioritized this issue by means of such a high-profile event

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as the adoption of its resolution 62/101 on 17 December 2007, the United Nations General Assembly has taken sufficient action to formulate the task of enhancing registration practice and encourage States to combine their efforts to ensure the accomplishment of this task.

3. Although consensus on the feasibility and advisability of enhancing registration practice has been formalized, the modalities for achieving this goal evidently also need to be specified. In fact, the lack of a well-designed mechanism for implementing the General Assembly recommendations partly explains why the transition to the use of expanded-format notifications on launched space objects is largely held in abeyance. There is a need for a clear and commonly shared understanding of the best way to transform the task set by the General Assembly into a successful and widely supported practice. Meanwhile, some national practices do not appear to adequately reflect the convention-established requirements imposed on States to register objects under their jurisdiction and control in an appropriate manner, and may even conflict with such requirements. Given the continuing practice of non-registration (notably, cases of intentional non-registration that attract particular attention) and the persistence of selective and arbitrary (even from the standpoint of criteria designed by the Registration Convention) approaches to the format (volume) of the information provided, it would hardly be possible to expect decisions on following essentially new and higher standards to be widely and readily accepted by States.

4. Given the prospects for furnishing expanded information on space objects on an exclusively voluntary basis and without amending the Registration Convention, States are facing the task of harmonizing new information provision requirements with their interests in outer space in a manner that each State understands and formulates in its own way. These interests represent an even more significant factor in defining national practices in registering space objects than is usually assumed.

5. The recommendations of the United Nations General Assembly are evidently based on the assumption that all space objects that are launched are subject to registration; they do not therefore specifically aim to prevent cases of non-registration of such objects. However, it is possible to trace cases where registration information on successfully launched space objects is either totally non-existent (although the launch may be covered by the media) or presented in a very limited scope which has no practical application and/or does not comply with article IV of the Registration Convention. For example, the registration information on a space object launched into the geostationary orbit area may indicate the parameters of a low parking orbit where, according to the flight plan, the object actually spent very little time. Such inadequacies and discrepancies could hardly be attributed to mere lack of foresight. Some countries deem it possible not to provide the United Nations with information on the basic parameters of the final injection orbit which would, in fact, make it possible to ascertain the part of outer space where the object is located. It is evident that the real reasons for allowing such practices are associated with the way some countries specifically understand their own interests in the sphere of national security. Through non-registration and/or the incomplete furnishing of the data required for proper registration of space objects (for example, without specifying orbit parameters), space objects are actually divested of any attributes and characteristics that could allow their identity and the precise way they got into the orbit to be established. This makes it possible to achieve quite definite objectives

conditioned by corresponding political goals. Whatever explanation may seem tenable, credible and preferable in situations like those described above, it is evident that such practice seriously restricts information on objects and events in near-Earth space from the point of view of completeness, accuracy and reliability and, consequently, creates risks of contingencies and compromises security in outer space. A situation where undeclared or inadequately declared space objects may potentially cause incidents and conflicts or even serve to advance confrontational anticipation cannot be ruled out. In particular, for these reasons there can be no credible justification for deliberate evasion of registration.

6. The problem of non-registration calls attention to the issue of how to deal with the spent stages of launch vehicles. It is known that the report of the Secretary-General of the United Nations on the review of the application of the Registration Convention (A/AC.105/382) recognized the practice of non-registration of stages (still followed by the majority of States) as being compliant with that Convention. It can be stated that States were chiefly motivated to refrain from registering stages by the fact that, generally, stages are not themselves functioning space objects. At the same time, it could, in principle, be assumed that such unequivocal assessments do not fully reflect the current state of affairs, as the development of technology has made it possible to utilize spent stages of launch vehicles as platforms for non-detachable payloads continuing to operate long after the stage itself has ceased to function. It should be noted that national regulation of the issue of the registration of stages is changing over time and in a number of cases is marked by dynamics in the sense that States decide to register stages. This may be regarded as a sign, in particular, of an intention to ensure adherence to the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space.

7. So far, there seems to be no full understanding of how to holistically create political preconditions for the application of a single approach that would make it possible to avoid random development and variability of practice in this sphere, and to expand the format of registration. There should be an additional discussion of the modalities for ensuring that States, faced with a choice (because, formally, it is recommendations that are being addressed here), will be able to act in a concerted fashion to achieve the uniform enhancement of national registration practices and making use of their adaptability. Essentially, a mechanism is needed for transforming the recommendations produced into practice of States that is as broad as possible and collective by its very nature. The decision on updating the regulatory system should be translated into a reliable formula allowing States to implement shared standards of behaviour and take concerted actions.

8. Provision of additional information on space objects and the functions they perform, as well as information on the particularities of their orbital motion, may indeed have relevance to the sphere of national security interests. At the same time, provision of information on the orbital location of space objects and its timely use form the basis both for ensuring the general safety of space operations and for the entire system of security of space activity. Accordingly, States should take practical joint action to develop a proper system of priorities.

9. Simultaneous participation by all launching States, and especially those that actually perform launches (and, inter alia, provide launch services), in the improved registration procedure for space objects would be the key to achieving the goals set

by the General Assembly. In this overall context, they should contribute to the debarment of cases of non-registration of space objects. It cannot be ruled out that, under certain political or other circumstances, it might not be possible to guarantee sustained adherence to new practices in this domain. Such practices themselves will turn out to be short-lived unless they are implemented in a sufficiently coherent and effective manner by a considerable number of States, primarily those exercising jurisdiction and/or control over operators (suppliers) of launch services.

10. Analysis of a variety of practical situations arising in the course of conducting activity in outer space reveals problems which affect registration to various extents and are fairly complicated in organizational, technical and legal terms. Regulation of registration (including through implementation of the General Assembly's recommendations set forth in resolution 62/101) is, to a large extent, still tailored to the practice of conducting space activity that was typical of past years and was objectively simpler in organizational and technological terms. The situations that are evolving now are conditioned by the use of essentially new technological solutions, the increasing design complexity of space objects and growing numbers of participants in space activities. Moreover, the increasing impact of commercial profit considerations often leads in practice to situations where launch customers and space object operators are not always requested in sufficiently clear terms to fulfil all the applicable registration requirements. Cases of the transfer of rights and obligations with respect to space objects may also result in overlaps in registration practice. In addition, problems associated with the possible failure of space equipment continue to play a role.

11. Review of the online index of space objects maintained by the Office for Outer Space Affairs of the Secretariat reveals a whole range of decisions on the scheme of registration of space objects adopted at the national level that appear not to have been foreseeable. In a number of cases the State providing launch services assumes the role of the State of registry in respect of the objects it has launched, although jurisdiction and control over these objects are apparently exercised by a different State. This practice does not comply with the requirement stipulated in article VIII of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. Space objects owned by given private companies carrying out their activity under the legislation of one State are recorded in the Register of Objects Launched into Outer Space on behalf of another State, thus raising questions regarding the rightfulness of such decisions. There are cases where States actually, for no obvious reason, neglect their obligations under the Registration Convention by preferring not to include in their national registries the objects that should be listed there according to all legal criteria. In such situations, the Secretary-General of the United Nations is simply informed of the launch. Such practice has been observed with regard to some launches of satellites of former international organizations for satellite communication that have now become private companies. The system for executing the registration function with respect to situations affecting the territories with special status can be characterized as rather intricate and essentially constituting a "grey zone". General Assembly resolution 68/74 of 11 December 2013, entitled "Recommendations on national legislation relevant to the peaceful exploration and use of outer space", may prove to be useful functionally and from the point of view of promoting more orderly regulation in some of the challenging situations identified above. Serious deliberations would be warranted to identify

practical solutions to prevent the replication of practices that are evidently far from impeccable in legal terms.

12. Efficient registration practice may be achievable within the general regulatory framework expected to be created by the guidelines for the long-term sustainability of outer space activities. The preliminary draft text of the guideline relating to registration is reduced to a reference to General Assembly resolution 62/101 and has no regulatory elements. Nevertheless, it is clear that the final draft of the guideline should be different. Joint work needs to be done to work out the regulatory details and prepare a text with a logical premise and a fixed set of functions

13. General Assembly resolution 62/101 should be treated as a document representing a fairly logical and convincingly elaborated integral whole. However, this does not imply that at the stage of transforming the recommendations contained in this resolution into a new quality of a guideline intended to give a practical dimension to the proposed regulation, it would not be worthwhile reaching, where necessary, additional understanding regarding technical aspects and terminology (including adjustment of the translations in all the official languages of the United Nations), as well as achievement of agreement on implementation procedures.

14. A number of the recommendations made by the General Assembly were prompted by the good intention of ensuring improved record-keeping for objects launched into outer space. To achieve this goal there is a need for a dataset allowing the origin, ownership and location of objects to be clarified and the objects themselves to be classified according to characteristics directly relevant to the process of creating an information basis for ensuring the safety of space operations. Ideas that could facilitate the process of finding effective solutions to technical issues are introduced for consideration in paragraphs 15-19 below.

15. The centralized practice of registering orbital launches is, in fact, no longer functioning. Until July 2011, such registration was carried out by the World Data System of the International Council for Science. Consequently, the Committee on the Peaceful Uses of Outer Space will definitely have to decide on ways and means of resuming centralized practice within a new international platform (for instance, within the framework of the Office for Outer Space Affairs) and in a renewed format (on the basis of direct interaction between States and the Office). If the Office, as may be supposed, were to undertake those functions, all States conducting orbital launches could, by way of contributing to such activities, promptly provide confirmation of the fact of a launch and the origination of any new object in orbit. Such a solution would fully ensure the required centralization of the function of assigning an international designation to orbital launches in accordance with the Committee on Space Research system and would create a practical basis for States to implement the recommendation to include the international designation of space objects in the registration information. The usefulness and functionality of the Russian proposal to establish a unified centre for information on near-Earth space monitoring under the auspices of the United Nations are quite vividly confirmed in this context since an information platform of the kind proposed could provide the framework for implementing the function of record-keeping with regard to launches of space objects on the basis of information provided by States.

16. General Assembly resolution 62/101 contains a fairly extensive list of characteristics pertaining to space objects that are recommended for reporting.

These characteristics have, as regards certain aspects, something in common with the requirements of the Registration Convention or could add new elements to the existing regulatory framework. Some of these elements (indication of location on the geostationary orbit and of any change of orbital position), as well as the orbital parameters indicated in the Convention, will be truly useful in terms of the goals and tasks of ensuring the safety of space operations only if their values are referenced in Coordinated Universal Time. Such a concept, which has not hitherto been used in the registration of space objects, should be reflected in the guidelines for ensuring the long-term sustainability of outer space activities.

17. Regarding a number of aspects, General Assembly resolution 62/101 undoubtedly contains fairly broad recommendations. Nevertheless, working on the issues pertaining to the safety of space operations raises the need to formulate the recommendations in sufficient detail in order to manage such operations efficiently, paying attention to the fact that the equivalence of some terms used in the texts of the above resolution in various official languages of the United Nations is questionable (there are clear discrepancies in the terminology used in the Russian and English versions of the document). For instance, in the resolution, the General Assembly encourages States to consider the possibility of providing information in respect of "any change of status in operations". This recommendation can, quite reasonably, be understood as referring to the advisability of providing information on the changes in the functioning status of a space object and/or information on the changes in the functionality of a space object in general. In this respect, the following possible descriptions for specifying this "status" may be addressed: "operational"/"non-operational"; "is being used for the intended purpose"/"has been transferred to the storage regime"/"is undergoing testing". Moreover, in this same context, it is also possible to presume that what is actually meant is information on any change in the mode of operation of the object (including in modes of attitude control, stabilization and radio link use). So as, firstly, to avoid creating a problem out of objectively existing interpretative issues and, secondly, to avoid prejudicing the objectives of the resolution, it should be explicitly provided for in the guidelines for ensuring the long-term sustainability of outer space activities that, in order to ensure the safety of space operations, States and international intergovernmental organizations, acting in a responsible manner, should to the maximum extent practicable provide information proceeding from the following indicative list of circumstances characterizing the flight of a space object:

- Termination or renewal of operation
- Loss of functionality due to failures or other reasons
- Loss of flight control with simultaneous risk of causing radio frequency interference to other operational space objects and/or risk of dangerous conjunctions with other operational objects
- Separation (if envisaged) for subsatellites and/or technological elements
- Deployment (if envisaged) of elements that significantly change the properties of the space object from the point of view of assessing the time of its ballistic existence (this characteristic is particularly important for small and extremely small space objects that operate on low orbits)

- Transfer of a space object to a disposal orbit or to an orbit with reduced time of ballistic existence

If such a list is reflected in the draft guideline devoted to implementation of the resolution, the Office for Outer Space Affairs would have formal grounds for working out in detail the corresponding section of its Registration Information Submission Form, so as to implement the resolution.

18. The issue of providing information on a space object's capability to perform a dedicated function of change of orbit, which is essential for preventing the collision of objects, needs to be specifically highlighted. The declaration by a State of such a function in a space object under its jurisdiction and control leaves that State to a certain extent vulnerable in the sense that it may serve as a basis for a requirement advanced by another State, based on its own calculations, to change the trajectory of motion in order to avoid collision with the space object of that other State. There is no universal criterion or generally acknowledged procedure for defining, in each particular case, which of the space objects has "priority" and which of the two States has to change the trajectory of its space object. Moreover, it is unlikely that it will be practically possible to elaborate such criteria and procedures in the foreseeable future. A reasonably possible functional solution to this problem could be planned within the framework of the unified centre for information on near-Earth space monitoring. Such a centre would accumulate multi-source ephemeris information describing the trajectory of motion of space objects that is absolutely necessary for quantifying possible risks and establishing the tentative sequence of further steps to be taken (with the understanding that such steps are to be further ascertained in accordance with the recommendations contained in the provisionally agreed draft guideline on conjunction assessment).

19. An issue that remains unregulated is that of registration in two situations that may arise during a launch envisaging the simultaneous placement of several space objects into orbit. The first situation occurs when, because of a malfunction, separation of the objects from the launch vehicle's stage does not actually happen. In such a case, there is a space object in the orbit that is de facto a "conglomerate" of several space objects which may be under the jurisdiction of one or several States. This situation, in turn, engenders the problem of the registration of each of the objects of the "conglomerate". The other situation occurs when, during the launch of several space objects, the separation operation is technologically/operationally "postponed". Within the framework of the analysis of registration practice, it has not been possible to identify the cases of registration of objects actually delivered to the orbit as part of other objects which do not perform independent orbital flights and remain in "standby mode" while awaiting the start of the separation operation. However, in accordance with the recommendation contained in General Assembly resolution 62/101, during every such launch each space object must be registered separately. Being in congruence with the Registration Convention, the resolution leaves open whether the object should be registered only when it performs an independent orbital flight, or whether registration should take place during the phase when it is already in the orbit as part of another object. Launching the objects in the "postponed separation" mode without notification that such separation will subsequently take place may lead to measurable risks for space operations, engendered by an unexpected appearance of new orbital objects. Fundamentally, this problem may be solved by achieving and adequately formalizing the

understanding that, when the corresponding section of the Registration Information Submission Form developed by the Office for Outer Space Affairs in accordance with the resolution is filled out, the names of objects intended for separation must be specifically indicated along with other information.

20. If States take a serious attitude to setting out the recommendations of the General Assembly in the qualitatively new context of a draft guideline, an opportunity will open up to carry out an extra check of the technical content of the key notions that form the basis of the recommendations in the versions of the resolution in all the official languages of the United Nations. The advantage of this approach is that the text of the guideline will be complete in terms of ensuring substantive content and absolute accuracy of terminology.

21. Given the foregoing, the Russian Federation submits (in original Russian and English versions) the following text of the potential guideline as the solution to a variety of topical problems related to the registration of space objects, for the consideration of the Scientific and Technical Subcommittee.

Draft guideline

Consistent enhancement of the practice in registering space objects

States and international intergovernmental organizations, acting in support of the objectives of the Convention on Registration of Objects Launched into Outer Space of 14 January 1975, should, on a continuous basis, take measures to ensure effective and comprehensive implementation of the registration procedure established by the said Convention. In this context, they should also undertake to translate into successful political action, through practical tools and normative regulation, the accomplishment of the tasks of enhancing the practice in registering space objects, as set by the relevant resolutions and recommendations of the United Nations General Assembly, so that the procedures for provision of expanded registration information gain wide international acceptance and are sustained in the long term. States and international intergovernmental organizations should act in this domain in a responsible way, considering proper registration of space objects an important factor of security in outer space, and should accordingly be guided by, and make their policies contingent upon, the following overriding principles and understandings.

It should be conclusively assumed and/or provided for under regulatory instruments enforced by States and international intergovernmental organizations and related to space policies that States and international intergovernmental organizations should not, in any formal or practical way, neglect or unduly perform the procedure of registration, and that non-registration of space objects may have serious negative implications for ensuring the safety of space operations. States and international intergovernmental organizations should discourage non-registration and should not provoke, support or allow any non-registration practices for whatever reason. Solutions should also be sought whenever specific launches of space objects give rise to legal or technical issues that call for diligence in the implementation of registration procedures.

In case it can be maintained plausibly that a space object has not been registered in accordance with the criteria provided for in the Registration Convention and resolutions of the United Nations General Assembly, States and international intergovernmental organizations may direct a request to the State/international intergovernmental organization that presumably abstained from registration to clarify its intentions or officially refute the fact of non-registration. Any assumption of non-registration should be substantiated accordingly. Such requests should be responded to, and the presumed fact of non-registration should be commented on, with a view to clearing up any possible misconceptions and/or resolving concerns. In making appropriate responses, the requested States/international intergovernmental organizations should, when appropriate, provide for the assurance of the absence of ulterior motives and/or specific intent behind a non-registration that actually took place. States and international intergovernmental organizations are obliged to act in such a way as to avoid abuse of the right to direct such requests.

The Office for Outer Space Affairs should, on a continuous basis, be vested with appropriate authority to take action to establish and sustain an implementation mechanism that would enable it to satisfactorily achieve the goal of encouraging and ensuring the adherence of States and international intergovernmental organizations to consolidated practice in furnishing expanded registration information. Specifically, the Office should be effectively engaged in executing integrated functions pertaining to: the accumulation of information on orbital launches performed (i.e. actually completed launches resulting in the placement of objects into Earth orbit or beyond) and orbital objects (i.e. space objects which have actually been launched into Earth orbit or beyond); and the assignment of international designations to orbital launches and orbital objects in accordance with Committee on Space Research notation, as well as the provision of such designations to the States of registry.

The launching States and, where appropriate, international intergovernmental organizations should assume the responsibility for requesting, on legitimate grounds, space launch service providers and users to meet all registration requirements under the Registration Convention, and for encouraging their receptiveness to the feasibility of, and urging them to contemplate, the provision of expanded registration information. States and international intergovernmental organizations, having institutionalized the practice of providing expanded registration information, should strive to sustain such practice. In cases where such practice ceases to correspond to the interests of a State, in particular within the purview of its national security policies, or the interests of an international intergovernmental organization, in particular pertaining to security, such State or international intergovernmental organization should, in an official statement forwarded to the Office for Outer Space Affairs, identify circumstances that make such continued practice impossible.

States and international intergovernmental organizations, acting in a responsible way in the interests of ensuring the safety of space operations, should to the maximum extent possible provide information describing the condition (status) of a space object and changes in orbital location of a space object. Description of the condition (status) of a space object should be provided as correlated with the following indicative list of circumstances of its flight, which is to be considered immediately responsive to the task of ensuring the safety of space operations and

functionally equivalent to the occurrences presumed in paragraph 2 (b) (ii) of General Assembly resolution 62/101:

(a) Termination or renewal of functioning of a space object;

(b) Loss of functionality of a space object due to technical flaws or other reasons;

(c) Loss of ability to control the flight of a space object with simultaneous emergence of the risk of harmful radio frequency interference with radio links of other functioning space objects and/or the risk of potentially hazardous conjunctions with other functioning space objects;

(d) Separation (if envisaged) of subsatellites and/or technological elements of space objects;

(e) Deployment (if envisaged) of the construction elements which purposefully change properties of a space object that influence its orbital lifetime.

States and international intergovernmental organizations, acting in the same manner, should to the maximum extent possible provide the information which is presumed in paragraph 4 (a) (iii) of General Assembly resolution 62/101 and which describes changes in the orbital location of the space object, in accordance with the following indicative list:

(a) Purposeful change of orbital parameters of a space object as a result of which the said space object moves to a different region of near-Earth space;

(b) Placement of a space object into a graveyard orbit or an orbit with reduced ballistic lifetime;

(c) Change in location on geostationary orbit;

(d) Repositioning (not entailing significant changes in basic orbital parameters) of a spacecraft operating as part of a satellite constellation among nominal slots within the orbital structure of this constellation.

In cases where a launched space object contains other space objects planned for future separation and independent orbital flight, States and international intergovernmental organizations should, in the course of registering the main space object (at the stage of entry in their registry and when furnishing registration information to the Secretary-General of the United Nations), indicate (for example, in the form of side notes) the number and names of space objects planned for separation from the main one, with the understanding that those space objects should not be given different or modified names at the stage of subsequent registration.

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Additional considerations and proposals for building up understanding of the priority aspects, comprehensive meaning and functions of the concept and practices of ensuring the long-term sustainability of outer space activities

Working paper submitted by the Russian Federation[1]

1. The focus of this working paper, like those previously submitted by the Russian Federation, is to further consolidate proposals on pertinent aspects of ensuring the safety of space operations and the long-term sustainability of outer space activities in general. Following the outcome of the work of the Scientific and Technical Subcommittee undertaken from February 2012 to the present, certain baseline conclusions related to ensuring the long-term sustainability of outer space activities, and primarily the safety of space operations, have been substantiated in a fairly detailed manner. However, there is still a need for a meaningful analysis of a number of important topics that have not yet been considered or have been covered only superficially. The set of guidelines currently being prepared clearly needs to include more reasonable and practical decisions conducive to a more maturely developed, fully integrated and consistent conceptual framework for ensuring the long-term sustainability of outer space activities and the safety of space operations. Of particular importance is the issue of how the level and the principal directions of the development of the safety culture as applied to outer space, and the modalities for assured and enhanced regulation in this field, will be determined in the long run. No State should neglect participation in a most serious discussion of issues raised in this context. The 2015 session of the Scientific and Technical Subcommittee is to decide whether it is possible to implement the preferred scheme agreed upon in

[1] The text of the present document was first made available, in English and Russian, as a conference room paper at the fifty-second session of the Scientific and Technical Subcommittee (A/AC.105/C.1/2015/CRP.24).

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June 2014 for completing all work on the guidelines by 2016. The prospects for shaping up practical ways of regulating the issues related to the security of space activities and the possibility for developing methods for implementing various types of space activities building on the multifaceted assessment of the situation and identifying means and technologies for tackling specific tasks within the space operations safety system will depend on the quality of the guidelines and whether they can be made relevant and workable. Efforts should not be limited to achieving fragmentary regulation. On the contrary, the scope of the regulations should be sufficiently broad and provide for the adoption of systemic measures. Otherwise, the guidelines for ensuring the long-term sustainability of outer space activities will ultimately prove of little practical use (taking into account both the highly dynamic development of space activities themselves and the processes of global development as a whole). In this regard, States and international intergovernmental organizations need to show their commitment to new values by ascribing greater importance to moral considerations as an incentive to carry out regular monitoring of their own activities and as an integral part of the regulation system, particularly for those important aspects of space activities for which no sustainable international legal regulation has yet evolved. The quality of the regime for long-term sustainability of outer space activities now being developed would have to be corroborated through appropriate types of political, legal, material, technological and informational support for joint efforts to ensure the security of space activities under universally recognized good-faith practices.

2. Russia holds a calibrated pragmatic position and reasonably believes that consideration of this topic offers a unique opportunity to highlight the incentives for introducing a new practice providing tools to positively influence the situation in near-Earth outer space, together with a sustainable cooperation process based on mutual interests and common approaches to resolving important issues of the safety of space operations and the security of outer space activities in general. Commonality of interests should be developed on the basis of joint commitments by States and international intergovernmental organizations to strengthening the safety culture in outer space with due regard to all those circumstances and factors that are essential or crucially important. The Russian Federation, driven by relevant, fair and trustworthy motives, stands by the priorities of genuine regulation in the area. Thus, the Russian side has a clear vision of the negotiation process: the project to develop the guidelines can be considered fulfilled when all the significant issues have been well and truly resolved. With this understanding, Russia is submitting detailed proposals on aspects of the future implementation of the concept of ensuring the long-term sustainability of outer space activities and the functions that this concept is designed to perform. The Russian proposals fully meet the requirements of responsible use of outer space and are designed to achieve important, realistic objectives. All the draft guidelines proposed by Russia, as well as the concept of establishing a unified centre for information on near-Earth space monitoring as an information platform under the auspices of the United Nations, are well grounded. The said draft guidelines and the concept of the centre are well adjusted and tailored to each other to allow the diligent development and consistent implementation of a common concept of the safety of space operations. This is a key point, since preserving outer space as a stable, safe and conflict-free environment is crucial for its future use in the interests of sustainable development on Earth. Russia therefore invites the States represented at the Scientific and Technical Subcommittee to show

foresight and to provide real opportunities to agree on express and positive interests and responsibilities for space security, as well as a number of key stabilizing functions in the context of the basic understanding of ways and means to ensure such security.

3. The serious approach taken by the Russian Federation to the subject matter of the safety of space operations has prompted its proposal to discuss the legal basis and modalities for invoking the right to self-defence with regard to outer space within the public negotiation process held under the auspices of the Committee on the Peaceful Uses of Outer Space. The lack of a common understanding on this issue on a multilateral and universal basis could, potentially, seriously complicate the maintenance of safe space operations. By proposing analytical research in this field, Russia rightly calls for a responsible attitude to the problem. In this regard, the essential understanding achieved at the 2014 session of the Committee to expand the potential of the priority item on its agenda, concerning ways and means of maintaining outer space for peaceful purposes, is a source of satisfaction. In both cases — that of ensuring safety of space operations and that of clarifying the mechanisms for invoking the right to self-defence — there is a need to reach an understanding on the modalities for safeguarding the sustainable use of outer space and avoiding confrontational schematics and unfavourable prospects in this important area of human activity.

4. If a task is set to objectively assess the opportunities for implementing the concept of the safety of space operations and security of outer space activities in general, the issue of how and in which direction the global scenario is developing, and specifically the likelihood of a trend towards an increasing use of geopolitical instruments, cannot be overlooked. Such a holistic perception of reality entails analysing the feasibility of finding a solution to the problem of space security in an increasingly challenging geopolitical environment, taking into account the factors and tendencies inherent in rigid forms of geopolitics. By exerting a multi-pronged effect, geopolitics is aimed at specific targets, inter alia, in the field of information. Experience has shown that stakes can be placed on misleading interpretations of events. Both the immediate and remote consequences of such geopolitical schematics call for proper attention when it comes to establishing a system of relationships to ensure the safety of space operations. It is important to be conscious of all the factors that could hinder the collective resolution of problems in this field. The interconnection of all related developments and trends may, under certain circumstances, lead quite predictably to a situation where the hopes for assured and conscientious information exchange on a bilateral basis or on some other individual basis turn out to be delusory because of the subjective factors involved.

5. The joint definition of approaches to elaborating the concept of the long-term sustainability of outer space activities is to serve the purpose of minimizing, as far as possible, conflict probability in connection with space operations. Hence there is a reasonable need to identify and define potential sources of insecurity when carrying out outer space activities and to take appropriate responsible measures to prevent uncontrolled developments, whether due to technogenic factors or to conflicts of interests. This is even more important in view of the lack of any generalized or universally recognized notion of "harmful interference" (besides that defined in the Radio Regulations), not to mention such a category as "hostilities". As for the work of the Scientific and Technical Subcommittee on ensuring the safety

of space operations, it definitely can and should result in issuing an appropriately configured regulatory document distinguished by clear positive characteristics. The current version of the draft Code of Conduct in outer space, by contrast, lacks the essentials for strengthening security in outer space. Implications are actually the true essence of this document. Diligently reaffirming the commitment to the principle of the non-use of force, the draft Code advances the idea of the legitimacy of unauthorized coercive measures in respect of foreign space objects, if required, for example, for the purpose of space debris mitigation. Thus, any proper interpretation of the generally recognized norm of the non-use of force is being brought to naught. It is no coincidence that in the draft Code the basic principle of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, which stipulates that "outer space shall be free for exploration and use by all States... on a basis of equality and in accordance with international law" and that "there shall be freedom of scientific investigation in outer space", has been replaced by a substantially modified "combi-thesis" (branded as a "principle"), which declares "the freedom for all States... to use outer space for peaceful purposes without harmful interference...". Such "details" in the draft Code are not incidental — all these elaborate elements are designed to be aligned with those of its provisions that envisage coercive measures. Abilities to establish associative links should suffice to understand that the zeal for space debris mitigation is being used in a rather utilitarian way to legitimize a fundamental change in the status of outer space, and the above norm of the draft Code is nothing but a tool to enable geopolitics to find its "laws" of application in outer space. Modifications of the provisions of the 1967 Outer Space Treaty are aimed at ousting basic notions of what is rightful and bringing about a political reconstruction and depreciation of the basic principles and standards of conduct in outer space. In this respect, the initiative under consideration obviously goes beyond what is tenable. Instead of strengthening the security regulation process in outer space, the international community will end up weakening it. It is pertinent here to cite as an example the national regulation of one of the States that is co-sponsoring the draft Code. Its basic doctrine document defines the concept of "control" in respect of outer space in terms of "freedom" (i.e. freedom of action for itself) and "denial" of access to outer space (obviously for those States to which it would be deemed reasonable to deny such access). The most important thing here is not the overestimation by a certain State of its actual capacities for acting in outer space in such an aggressive way, but the tendency evident in the development of approaches to outer space by the Code's drafters. This raises reasonable questions about the consequences of the persistent efforts by the authors and co-authors of the draft Code to push through such an untenable position. The practical concerns that arise in connection with the draft Code deserve to be addressed by the Committee on the Peaceful Uses of Outer Space, while the above-mentioned provisions of this document call for political and legal assessment within the United Nations.

6. It is known that some States uphold the paradigm of dominance in outer space. Such a doctrine is fundamentally different from previously set targets, such as leadership and even superiority, to which policies have been confined until recently. Dominance is not limited to factors and considerations of technological (including military) pre-eminence; in fact, it is equivalent to the promotion of truly aggressive schemes that involve the establishment of relations of dominance and dependence.

In the context of the safety of space operations, the ideology of dominance is of interest not so much as a basic symbol of political consciousness that forms national identity, but rather as a powerful factor and political tool in assessing opportunities and resources and identifying desired goals and means to achieve them. It would be practically useful to clarify the congruence of doctrines claiming dominance in outer space with the Outer Space Treaty of 1967, as well as the potential impact of such an entrenched political mentality on the regime of the secure use of outer space. The implementation of practical measures to establish dominance in outer space may quite predictably lead to the malfunctioning of the system of ensuring the safety of space operations. Here it is important to have a clear understanding that the logic and the strategic needs of the doctrine of dominance inevitably involve a highly active influence on the information sphere. It is obvious that the doctrine of dominance would not be complete if it did not imply a drive to monopolize certain spheres of activities and the use of coercive measures. States and other participants in space activities should be aware that such developments in the information sphere affecting the monitoring of outer space would certainly not be the best scenario.

7. The need for communication for the purpose of promoting the safety of space operations can be effectively assured through the information platform under the auspices of the United Nations. Such an option for interaction would be positively distinguished by its clearly practical and pragmatic nature derived exclusively from the functional mutuality of information providers which, for whatever reason, may not be engaged in direct interaction. International practice provides an example of the successful establishment of such a structure within the United Nations system, namely in the World Meteorological Organization, which provides all States with information about possible adverse and severe weather conditions. It would therefore be expedient to carefully analyse the benefits of creating (as proposed by Russia) a unified centre for information on near-Earth space monitoring. Such a centre would provide an influential and powerful incentive to develop commonality of interests in this area of considerable importance. It is appropriate to note the following pro-multilateralism motivations regarding interaction in this area:

- The centre's association with the United Nations would provide significant political and institutional prerequisites for initiating and sustaining interaction procedures, thus enabling joint efforts to be sustained in a stable way;
- Applying the centre's mechanism would allow States and international intergovernmental organizations to establish the exchange of information in such a way as to avoid dependence on the schematics of geopolitics and to allow the direction of development of international activities to be defined and maintained in the interests of ensuring the safety of space operations (while establishing, with added certainty, the prospects for confidence-building in outer space activities);
- The centre would become a reliable integrated source of information from different (mutually independent) information providers on the operational situation in near-Earth space and would allow effective monitoring of changes as they occur;
- The operational and logistical structuring of the centre would not imply significant costs;

- Access to information furnished by the centre would be available to a considerable number of interested users.

States should be positively motivated to provide the centre with the information they possess. Policy in this area should be based on the understanding that information is to be made available to the entire international community, represented by authorized users. The clear advantage of the centre and its essential difference from other mechanisms reside in the fact that in the context of its work, information would be perceived as a common good benefiting all, and the sphere of information-sharing would not be regarded as competitive or susceptible to competitive motivations, including entrepreneurial space competition. Shaping a completely right-minded information-sharing attitude based on the principle of collective action would be an important element of the model of confidence-building in outer space activities.

8. The following are drafts of additional guidelines officially submitted to the Scientific and Technical Subcommittee by the Russian Federation in original versions in the Russian and English languages.

Draft guidelines

Achievement of basic understanding and development of practical approaches with regard to identifying, in the course of the preparation and conduct of launches, probable conjunctions of newly launched objects with objects already present in near-Earth space

States and international intergovernmental organizations should be urged to consider the pre-launch assessment of possible conjunctions and collisions of newly launched space objects with space objects already present in near-Earth orbit, as well as international coordination of planned on-orbit operations, as prospectively rewarding from the standpoint of managing the safety of space operations. States and international intergovernmental organizations should undertake efforts on a continuous basis and in a sufficiently consistent and integrated fashion to endorse the development and implementation, as technically feasible, of their long-term policy requirements designed to adequately address and accomplish this task. Conditions for the proactive engagement of States and international intergovernmental organizations in cooperative relationships and for the establishment, in the long term, of an appropriate operative information-sharing framework could include the development and use of a common international standard for representing and sharing appropriate information on the nominal flight trajectory of a launch vehicle during the insertion of spacecraft (payloads). [Notwithstanding bilateral or multilateral forms of cooperation as may be deemed feasible by relevant participants, States and international intergovernmental organizations should, when performing a pre-launch assessment of potential conjunctions and collisions of newly launched space objects with space objects already present in near-Earth orbit, duly avail themselves of the opportunities and benefits for the gathering and distribution of trajectory information on space objects already in outer space that are afforded by the Centre for Information on Near-Earth Space Monitoring under the auspices of the United Nations.]

In order to ensure the development of cooperative activities involving the sharing of detailed data and the elaboration of appropriate procedures for the purposes of the safety of space operations, States and international intergovernmental organizations should be encouraged to provide, where possible, pre-launch notifications

containing information on planned dates and times of scheduled launches, types of launch vehicles and basic information on space objects planned for insertion into orbit with reference to the destination regions of near-Earth outer space where newly launched objects are intended to be placed and/or basic parameters of nominal orbit for each object and the possible dispersion of their values. It should be the general understanding that recourse to pre-launch notifications featuring provision of both sets of information identified above could, as an internationally recognized practice, acquire a stable pattern and be sustained as a routine shared standard of action parallel to the enhancement of the space security regime, including, inter alia, transparency and confidence-building measures in outer space activities. Such a favourable combination of factors would serve to eliminate the motivational issues that may inhibit the formation of a comprehensive practice in this area. Special attention must be given to address, as an immediate task, the issue of placing into the practical implementation perspective a procedure for providing information on planned dates and time of scheduled launches, types of launch vehicles and basic information on space objects planned for insertion into orbit with reference to the destination regions of near-Earth outer space where newly launched objects are intended to be placed, as this would require significantly less effort for the new technical and associated procedures to be introduced and simultaneously provide a focused matching of solution to need and practical opportunity.

States and international intergovernmental organizations, acting in compliance with statutory tasks and responsibilities under their legislative and conventional regulations, should, through achievable and pragmatic steps, support and reinforce the potential for partnership with industry and ensure prerequisites for concerted activity on its part with a view to initiating and/or continuously proceeding with studying and exploring concepts of upgrading launch vehicle control systems that would permit the introduction of a procedure for making changes in flight programmes in order to ensure rapid response to unforeseen collision risks during an actual launch. States and international intergovernmental organizations should undertake efforts to develop and use a standard format for the generation and pre-launch sharing of information on nominal orbital parameters and probable dispersion of their values for each space object planned for separation and independent insertion into a target orbit in order to allow assessment of possible encounters and coordinate planned in-orbit operations accordingly. The experience gained and methods developed should, accordingly, be summarized and should be sought to be institutionalized and, in due course, be covered by spaceflight safety planning and launch readiness reporting procedures as far as technically and otherwise practicable. States and international intergovernmental organizations should be encouraged to address the task of achieving, through appropriate mechanisms, commonality or convergence of the practices developed and to promote their use to meet the objectives of practical and effective safety measures.

Prevention of dangerous alterations of space environment parameters resulting from intentional modifications

States and international intergovernmental organizations should support a clear understanding that challenges associated with ensuring the safe and responsible conduct of space operations provide an imperative to focus on the avoidance and management of crisis situations that may be associated with a misuse of technologies and technical means of intentional modification of the natural space environment, thereby posing threats to, and/or causing vulnerabilities of, space systems. Acting to uphold, through participation and/or application, vigilant

compliance with the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, which was opened for signature on 18 May 1977 and entered into force on 5 October 1978. States and international intergovernmental organizations should, in furtherance of the aggregate concept characteristic of that Convention, prioritize those aspects and criteria that meet the safety needs of space operations. States and international intergovernmental organizations should agree that the use of environmental modification techniques for peaceful purposes formally not hindered by the Convention, may, unless supported by criteria and procedures critical to safety, damage or harm the operational space objects in orbit and thus cause widespread and/or long-lasting, and/or severe effects under the Convention, in the sense that such effects may pose immediate and/or projected threats of fragmentation of foreign or any other space objects and result in the mass proliferation of space debris hindering use of the orbit.

For the purposes of this guideline, deliberate manipulation of natural processes shall mean intentional alteration of the characteristics of the space environment (electronic concentration and temperature of the ionosphere, density and chemical composition of the upper atmosphere, intensity of electromagnetic emissions, and characteristics of radiation belts, including the creation of artificial radiation belts). Accordingly, when planning and conducting outer space activities, States and international intergovernmental organizations should not engage in and/or allow entities under their jurisdiction and control to engage in the use of modification techniques that could impact the condition of the space environment in a way that would negatively (in addition to objective factors of the space environment) influence operational spacecraft and associated means of ground infrastructure to a degree either equivalent to or comparable to effects described in article I of the Convention. States and international intergovernmental organizations should be fully aware that such negative influence may lead to the incapacitation of operational spacecraft and associated means of ground infrastructure and, consequently, the increase in the number and frequency of collisions and the proliferation of small objects (particles) of space debris, interference in space radio links, failures in space objects' control processes, on-board equipment and navigation systems, and the distortion of radio signals used in technical means for measuring the trajectory parameters of space objects.

States and international intergovernmental organizations should give issues that form the substance of this guideline proper preventive and reactive regulation applicable to activities they or their related entities conduct or participate in, which would include:

(a) Enhancing awareness of the risks associated with any deliberate manipulation of natural processes in the context provided for in this guideline, as well as advancing a systemic approach to assessing and controlling such risks;

(b) Designing and implementing administrative, operational and technological restraints, respectively, at the stage of establishing and throughout the implementation path of experiments or other types of activity involving any deliberate manipulation of natural processes in the context provided for in this guideline;

(c) Setting safety-critical parameters of the space environment with regard to the scale and effect of any minor manipulations of natural processes in the context

provided for in this guideline, so that the use of such manipulation techniques does not result in damaging phenomena.

Notwithstanding paragraph 2 of article III of the Convention and without prejudice to the procedures provided for in the guideline "Sharing operational space weather data and forecasts", should a fact be established, in the context of implementation of this guideline, that safety-critical values of space environment parameters have been reached, States and international intergovernmental organizations should be open for consultation and/or provision of information, if available, in the event of a request on the part of other States and international intergovernmental organizations interested in such consultations and/or information for good and valid reasons.

Implementation of a policy aimed at precluding interference with the operation of foreign space objects through unauthorized access to their on-board hardware and software

By regulating and administering the functions involved in ensuring the safe and responsible conduct of space operations, States and international intergovernmental organizations, acting, inter alia, subject to the requirements of article VI of the 1967 Outer Space Treaty, should not directly or indirectly engage in, and/or associate themselves with, activities that support or assist any practice whereby any instruments and/or software that are, in functional terms, originally intended or purposefully modified for unauthorized interference in the regular operation of hardware and/or for unauthorized access to information systems of foreign space objects embedded in space objects and/or their components destined for export or use, through sale, lease or otherwise, by foreign recipients (users). Likewise, States and international intergovernmental organizations should require entities under their jurisdiction and/or control to provide guarantees (assurances) against any such practice on their part or that of their personnel or contractors (subcontractors) at any tier. The absence of any such embedded instruments and/or software should be officially attested by States or international intergovernmental organizations exercising jurisdiction and/or control with respect to manufacturers and suppliers of spacecraft and/or their components, as part of standing safety and security validation and assurance processes and/or at the request of the recipient (user). It should be a common understanding that any practice to the contrary, irrespective of motives that presumably could serve to substantiate it, and/or of the nature, scope, duration or intensity of the potential effect of any particular embedded instrument and/or software, or the engagement criteria used or ultimate objectives pursued in that context, would entail serious implications for the safety of space operations since altered control programmes and any other component as may be embedded in space objects could, if conceivably activated, negatively affect the operational capabilities and mission sustainment of the space objects accommodating them and, specifically, escalate the risks of failures and increase the incidents/accidents probability.

Considering that any practice addressed by this guideline and purporting to exert an effect on foreign space objects such as to lead, in particular, to the compromising of command transmissions, would intrinsically be fraught with the denial of rights and interests of States and international intergovernmental organizations that exercise jurisdiction and/or control over said assets in outer space, such practices should be qualified as violative of, and/or prejudicial to, the principles and norms of international law, specifically those deriving from article IX of the 1967 Outer

Space Treaty, as well as the established criteria for good-faith practices and commercial integrity.

States and international intergovernmental organizations should give appropriate consideration to ways and means of providing for such a state of affairs where the understanding recorded in this guideline would be reinforced, directly by them and by non-governmental entities under their jurisdiction and/or control, through practical actions at the institutional and technical levels. Such efforts should be undertaken with a view to creating the prerequisites for consolidating international regulation in the area addressed by drafting and adopting a separate high-level policy document (for example, in the form of an international charter).

Modalities for ascertaining substantively relevant bases for addressing and meeting requirements for the safe conduct, in extreme cases, of operations resulting in the destruction of in-orbit space objects

States and international intergovernmental organizations, while fully adhering to the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, in particular as regards the need to avoid intentional destruction of on-orbit spacecraft, are entitled to preserve options and pursue solutions that could provide for such destruction of space objects under their jurisdiction and/or control when alternatives to such operations would persuasively have far more negative consequences (as may presumably be warranted, for instance, in the context of international efforts to counter an asteroid hazard). Notwithstanding the concept outlined above, it should be generally understood that, as part of ensuring the long-term sustainability of outer space activities and preserving outer space as a safe, stable and conflict-free environment, the intentional destruction of space objects in near-Earth orbits is to be avoided. In this connection, every hypothetical case where a State or international intergovernmental organization faces an absolute need to perform an operation leading to the destruction of a space object under its jurisdiction and/or control (i.e. when circumstances of its flight afford no other technical option but such destruction) should be duly substantiated, with the destruction operation compellingly described as an unavoidable measure to avert immediate or potential serious threat to human life, the environment or property in outer space or, in case of the predicted entry of a space object into the Earth's atmosphere, on the ground, in the air or at sea. Furthermore, any operation that could result, through mechanical impact or the use of other means, in direct or indirect damage to or destruction of space objects under foreign jurisdiction (foreign control) should not be contemplated unless explicitly agreed to by the States/international intergovernmental organizations that exercise jurisdiction and control over such space objects.

Well in advance of proceeding, on legitimate grounds, with the operation for the destruction of an in-orbit space object, States and international intergovernmental organizations should take care to ensure adherence to a procedure for reporting on the circumstances of such operations that should provide for the basic elements outlined below. States and international intergovernmental organizations should, through the Office for Outer Space Affairs as well as other relevant channels when necessary, keep the international community appropriately informed of the circumstances that warrant such an operation and additionally inform it, as necessary, on how the evolving situation is assessed. It should be a general principle that the greater the probability of forecasted side-effects from an operation, the more nuanced should be the information made available internationally at different

stages of the operation's preparation and implementation. Where practicable, the prerequisites for organizing information provision in an expeditious reactive mode or in near-real-time mode should be properly considered. When developing sets of decisions that presume and substantiate an operation for the destruction of a space object, States and international intergovernmental organizations should provide for safety assurance measures that would include warranted and substantive safeguards, to the extent that such measures are deemed practicable and satisfactory.

Integrating and sustaining a shared cross-functional perception of, and definition of incremental steps to ensure, the safe implementation of operations for the active removal and intentional destruction of space objects, specifically as applied to non-registered objects

In the course of applying the guidelines on active removal and/or intentional destruction of space objects at the stage of designing and implementing relevant operations, States and international intergovernmental organizations should align such activities with the provisions of this guideline which supplies and reinforces major criteria for supporting individual and common interests as they should be understood in the context under consideration, including when procedures under the Convention on Registration of Objects Launched into Outer Space of 14 January 1975 (Registration Convention) have not been effectuated with regard to objects launched into outer space. States and international intergovernmental organizations should ensure completeness of regulation of the said operations on the basis of a fully integrated approach in order to avoid any loose, random or abusive practices.

States and international intergovernmental organizations should proceed from the understanding that securing legitimate grounds for operations for active removal/intentional destruction is directly contingent on the reliability achieved in establishing that a specific space object (whether or not registered in the Register of Objects Launched into Outer Space) planned for removal/destruction and a specific physical object in orbit that is presumed to be/is associated with such a space object represent one and the same physical body. Positive identification of the object to be actively removed or intentionally destroyed should be perceived as the determining (decisive) factor in the process of deciding to proceed with the operation. Accordingly, until the origin and status of a specific physical object are determined in a sufficiently convincing and precise way, that object should not be regarded as an immediate (established) target for active removal/intentional destruction operation. States and international intergovernmental organizations should consistently seek to concert their efforts aimed at establishing and maintaining procedures and mechanisms that would make it possible to effectively address and satisfy individual and common needs in the identification of objects in orbit.

Operations for active removal/intentional destruction should be preceded by thorough analysis of all feasible methods of their implementation, including an assessment of the risks entailed by each method. The degree to which the international community is to be informed about the technical aspects of the method chosen for implementing the operation is to be determined at the discretion of States and/or international intergovernmental organizations that plan and conduct such operations, with the understanding that the overall information support required for the purposes of safety of space operations should be adequately provided by them through the Office for Outer Space Affairs and, in addition, through other relevant channels. Such operations should be secured informationally and technically by the States and international intergovernmental organizations planning and conducting

them. Other States and international intergovernmental organizations should, as far as possible and upon request, provide informational and analytical support for such operations. Apart from the provision of valid near-Earth space monitoring information and the results of space situational analysis (if such results are available), such support may also include assistance in identifying relevant space objects on the basis of analysis of the accessible monitoring-information archives and posting of the results of such analysis for general access and use.

Considering specific features that characterize the development of the practice of applying the Registration Convention and are conditioned by differing views on the function of registration of all component parts of space objects and/or launch vehicles which either do not, ab initio, possess (due to their technologically inherent features) the ability to operate independently or else turn out to be incapable (due to contingencies) of sustained operational capabilities for the mission-specified time period, States and international intergovernmental organizations should, by way of applying the guidelines on active removal and/or intentional destruction of space objects and with a view to enhancing practice in registering space objects, proceed from the following understanding:

(a) The body of rules governing the title to, and status of, a space object, as established under international law, should be understood to be based on the interaction of factors that relate to the precise and operationally conditioned interpretation of the legal status of component parts of space objects and launch vehicles as well as of space objects that have not been capable ab initio or else have lost the capability to perform their assigned functions, as applied to cases where States and international intergovernmental organizations do not perform the dedicated registration of such component parts and objects, and of other factors that in any case have continued relevance and, in the light of the rights and obligations provided for in articles VII and VIII of the 1967 Outer Space Treaty, should not be dispensed with;

(b) The fact of non-registration of component parts of objects and, when relevant, objects as described in subparagraph (a) above that result from a space launch or contingencies during the flight of a space object should not in itself be construed as grounds for considering such component parts and objects to be devoid of title, taking into account, inter alia, the requirements of the Convention on International Liability for Damage Caused by Space Objects of 29 March 1972; and the absence of specific information on the said component parts and objects either in the registration information or as a reference to registration entries should not serve to substantiate the divesting of jurisdiction and control over such component parts or objects;

(c) Full concurrence with the practical observations contained in subparagraphs (a) and (b) above should not decrease the motivation on the part of States and international intergovernmental organizations with regard to identifying and configuring, as appropriate, pragmatic and feasible policies that would be instrumental for the ascertainment by the launching State, and/or the international intergovernmental organization that has accepted relevant rights and obligations, of the status of non-registered component parts of space objects or non-functioning space objects under their jurisdiction and control, with the possible outcome being voluntary decisions on the part of the said States and/or international intergovernmental organizations to waive, in whole or in part, the authority they exercise with respect to such component parts of space objects or non-functioning

spacecraft so as to make it possible to develop a framework for taking decisions on clearing outer space of space debris;

(d) The approach outlined in subparagraph (c) should assist States/international intergovernmental organizations in entering into potential joint decisions and arrangements that could fully accommodate requests for well-defined and validated obligations and technical procedures for the implementation of space debris removal operations where such operations have been determined by the parties to such joint decisions and arrangements to be a prioritized requirement/prioritized task.

By way of defining the particular features of the status of fragments (irrespective of their linear dimensions) resulting from break-ups of space objects for whatever reason or from the conduct of technological operations in orbit, consideration should be given to the fact that, for objective reasons, they may not be subject to registration due to the very nature of their origin, their physical condition and the impossibility of determining and regularly updating the parameters of their orbital movement. In order to assess the feasibility of their registration, the degree of reliability with which each particular fragment can be correlated with another identified space object that may be assumed to be the object of its origin and/or with an event that led to its appearance or formation in orbit should be correctly evaluated. States and international intergovernmental organizations wishing to register fragments which they, based on the results of identification, regard as having relevance to space objects previously registered by them should direct to the Office for Outer Space Affairs confirmation of the intention to perform registration of such fragments, accompanied by information on planned applications and requests to have such information posted on a relevant information resource of the Office. It should be presumed in this context that a strictly limited period of time is to be allotted for the receipt from other States and/or international intergovernmental organizations of objections to such registration, given that the relevance of the orbital information decreases steadily unless it is updated. States and international intergovernmental organizations planning to direct requests may, at their own discretion, update, to the extent necessary, the orbital parameters of fragments that they have provided and/or show readiness to transfer such information at the request of interested States and international intergovernmental organizations. In case the requests encounter motivated objections they are to be recalled and the differences that have arisen should be the subject of international consultations.

The shared vision of the practical aspects of addressing and resolving the interrelated issues of the safety of space operations and space debris mitigation should include the allowance for States and international intergovernmental organizations to provide, consistently with their authority and responsibilities in accordance with, and by implication of, the relevant principles and norms of the 1967 Outer Space Treaty, for options that would envisage adjustments to the status of space objects under their jurisdiction and control (including objects that originated from such space objects) which have ceased to function or to be functional, so as to provide definitive eligibility with regard to potential international efforts to clear outer space of space debris. Such practice may, in particular, be validated as an operational necessity with regard to space debris fragments if it is convincingly established that such fragments have irretrievably lost the ability to function or sustain functionality and that lifting constraints on their removal could be the best solution. The entire set of relevant activities should

be motivated by a strict procedure whereby States and international intergovernmental organizations make official announcements that they anticipate the need for such an adjustment of status while maintaining, as technically feasible, exact and necessary correlation with their liabilities under international law. The decisions planned for adoption and actually adopted should be explicit as to the context in which specific rights to exercise functions involved in determining the treatment of such objects would either be conferred (assigned) or waived. The feasibility and expediency of authorizing such practices and rendering them valid should be determined on a case-by-case basis. Acting in implementation of article IX of the 1967 Outer Space Treaty, States and international intergovernmental organizations, while strictly adhering to the understanding outlined above, should, by increasing their level of involvement in focused cooperative activities, work on integrating, as necessary, the different aspects of such activities on the basis of relevant agreements to provide for specific solutions in this area. Within such agreements criteria should be designed and leveraged to further define liabilities and allocate respective duties among all participants in the activities planned. Such agreements should prescribe applicable procedures for regulating access to a space object and/or its component parts as well as measures to protect technology, where such procedures and measures are necessary and feasible in practical terms.

Establishment of normative and organizational frameworks for ensuring effective and sustained implementation of the guidelines and subsequent activity on their review and enhancement

States and international intergovernmental organizations should, acting in a dedicated fashion, establish a regulatory framework that would pragmatically and effectively lead to, and sustain, positive experience in upholding the virtues that reside in the guidelines and, specifically, put in place relevant regulations, processes and compliance review arrangements. It should be commonly understood that the guidelines, while being subject to voluntary implementation from a formally legal perspective, are to be perceived in direct relation to, and as a functional augmentation to, the principles and norms of international law, and that their operation should be supported by appropriate political reasoning and institutional backing in core doctrinal texts. The guidelines should, through a manifest process, be officially attributed the status of a standard-setting document establishing internationally recognized baseline and advanced conditions for ensuring the safety of space operations and, in general, the long-term sustainability of outer space activities. Proceeding from such an understanding, States and international intergovernmental organizations should establish a means to effectively administer existing and, if necessary, leverage new security procedures, to meet operational requirements uniquely associated with the guidelines. In the course of implementing new approaches in safety/security affairs as they relate to outer space activities, States are encouraged to secure such a state of affairs whereby they would take account of national security considerations, in the context of pertinent national policy priorities, objectives and measures, proportionally to the purposes and tasks of applying the guidelines and in appropriate correlation with the substance, nature, requirements and particularities of international cooperation provided for by the guidelines. Decision-making tasks and concepts should be designed so that the understanding outlined above is diligently upheld. Likewise, international intergovernmental organizations should associate their own policies with this understanding and, acting through conventional regulations and engagement with

member States, endeavour to ensure that the aggregate concept underlying their actions duly correlates with the above understanding.

The United Nations should be regarded by States and international intergovernmental organizations as the principal venue for continued institutionalized dialogue on issues related to facilitating practical success in the efficient and comprehensive implementation of the guidelines on ensuring the long-term sustainability of outer space activities, and the United Nations itself should, acting in this capacity through the Committee on the Peaceful Uses of Outer Space and the Office for Outer Space Affairs, sustain a dedicated policy process and provide for an adaptable decision-making platform in this domain. The Committee should, as necessary, develop sets of solutions, in particular, in the format of agreed understandings (either regulatory or interpretative) that could, following applicable procedures, be formally attached to the guidelines. States and international intergovernmental organizations are strongly encouraged to introduce and support the practice of providing the Office with annual reports, time-framed for the sessions of the Committee, containing assessments of the status of implementation of guidelines. In such reports, States and international intergovernmental organizations should corroborate, with the support of credible estimates and indicators, their perception that current (as of the date of the reports) outer space activities (in general and/or in specific aspects) are stable, safe and conflict-free in all major aspects, thus affirming positive motivations with regard to the implementation of the guidelines. If warranted, such reports should also identify phenomena in outer space and/or developments in outer space activities that appear to be manifestly at variance with the guidelines and, hence, would possibly necessitate special consideration by the Committee at its immediate session. In addition, exigency notifications may be filed with the Office referencing occurrences (their plausible attributes and origin) causing particular concerns in the context of implementation of the guidelines pertaining to the safety of space operations and containing an appeal to the Office to mediate in requesting clarification of those occurrences from those States and/or international intergovernmental organizations which may have a relation to such occurrences. As part of projecting an open posture towards information exchanges benefitting effective implementation of the guidelines, specifically, as they relate to safety of space operations, States and international intergovernmental organizations should not neglect reporting to the Office on events that result from their own actions (or omissions to act) or actions (or failure to act) on the part of non-governmental entities under their jurisdiction and control and may be deemed essentially important in practical terms.

Concluding Remarks

The combination of draft guidelines proposed by the Russian Federation is aimed at producing (in the form of baseline requirements) real prerequisites for adding significantly to the concept of space security. In the framework of the Committee on the Peaceful Uses of Outer Space (and on its margins), some colleagues involved in the dialogue have expressed dissatisfaction at the pace of work on the issue of the long-term sustainability of outer space activities and the fact that the process of developing guidelines has, allegedly, become overly protracted. The underlying reasons for such assessments accompanied by lame arguments are obvious: not everyone is ready to accept that the work on the safety of space operations has expanded and has reached the level of more universal generalization. Thus, there is a desire to prevent the draft guidelines from developing into something much

greater than their current preliminary version. Nevertheless, the situation is such that the material developed to date (within the two-year period of activity of the relevant Working Group of the Scientific and Technical Subcommittee) does not have, in relation to a range of cases, the potential to solve issues or even provide the context for addressing them in the future. Building a system of relations for the safety of space operations at a higher level requires persistence as well as ample time for a full-fledged development of the normative fabric allowing to speak of a more technically complex but fair system of views on legitimacy in outer space solely based on existing generally recognized principles and norms of international law. Hence the need to maintain the intellectual status of joint work within the Subcommittee and to agree upon an effective methodology in this area. All member States of the Committee should decide whether they can accept a paradoxical discrepancy between the way the concept of the long-term sustainability of outer space activities was conceived and the way it will be embodied. States and their delegations should synthesize the impressions produced by intermediate results, bring them into line with reality and propose, where necessary, something practical and reasonable with regard to the draft guidelines. Scrutiny in this case will demonstrate that from the point of view of extending the range of tasks solved, work needs to continue so as to develop the subject matter of the safety of space operations and relevant norms of behaviour.

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Fiftieth anniversary of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space: theme of the sessions of the Committee on the Peaceful Uses of Outer Space, its Scientific and Technical Subcommittee and its Legal Subcommittee in 2018

Note by the Secretariat

I. Introduction

1. At the fifty-second session of the Scientific and Technical Subcommittee, in 2015, the Working Group of the Whole of the Subcommittee considered the item on space technology for socioeconomic development in the context of the United Nations Conference on Sustainable Development and the post-2015 development agenda.

2. In this context, the Working Group had before it a note by the past, present and incoming chairs of the Committee on the Peaceful Uses of Outer Space entitled "2018 'UNISPACE+50' theme of the Scientific and Technical Subcommittee, the Legal Subcommittee and the Committee on the Peaceful Uses of Outer Space" (A/AC.105/C.1/2015/CRP.30).

3. The Working Group agreed to the main proposal by the past, present and incoming chairs of the Committee and requested the Secretariat, in close consultation with the past, present and incoming chairs, to develop their proposal in further detail and present it for consideration by the Committee at its fifty-eighth session in June 2015 (see A/AC.105/1088, annex I, paras. 3 and 4).

* A/AC.105/L.292.

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4. The Legal Subcommittee, at its fifty-fourth session, in 2015, considered the note by the past, present and incoming chairs of the Committee entitled "2018 'UNISPACE+50' theme of the Scientific and Technical Subcommittee, the Legal Subcommittee and the Committee on the Peaceful Uses of Outer Space" (A/AC.105/C.2/2015/CRP.10).

5. The Subcommittee agreed to the main proposal put forward in that conference room paper and requested the Secretariat, in close consultation with the past, present and incoming chairs of the Committee, to develop their proposal in further detail and to present it in the six official languages of the United Nations for consideration by the Committee at its fifty-eighth session, in June 2015, taking into account the recommendations made by the Scientific and Technical Subcommittee at its fifty-second session contained in its report A/AC.105/1088, annex I, para. 4 (see A/AC.105/1090, paras. 233-234).

6. The present document, prepared by the Secretariat in consultation with the past, present and incoming chairs of the Committee, contains a more detailed proposal for consideration by the Committee at its fifty-eighth session, in 2015, as requested by the Scientific and Technical Subcommittee and Legal Subcommittee at their respective sessions in 2015.

7. The present document contains some proposals for the preparatory work in the lead-up to the fiftieth anniversary of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space in 2018 ("UNISPACE+50"), to be undertaken by the Office for Outer Space Affairs of the Secretariat, the Committee, and the subsidiary bodies of the Committee. It also contains proposals that the Inter-Agency Meeting on Outer Space Activities (UN-Space), under the leadership of the Office, align activities in the upcoming period leading to the "UNISPACE+50" thematic cycle of the Committee and its subsidiary bodies for 2018.

II. Proposal presented by the past, present and incoming chairs of the Committee on the Peaceful Uses of Outer Space

8. The first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE) was held in 1968. The year 2018 will mark its fiftieth anniversary, and this could be a fitting time to take stock of the contributions of the three UNISPACE conferences (UNISPACE I, held in 1968, UNISPACE II, held in 1982 and UNISPACE III, held in 1999) to global space governance. The Committee on the Peaceful Uses of Outer Space, its Scientific and Technical Subcommittee and its Legal Subcommittee, supported by the Office for Outer Space Affairs, have, for the past 50 years, contributed extensively to the fostering of international cooperation in space activities at the international, regional, interregional and national levels for the benefit of all countries.

9. The fiftieth anniversary of the first UNISPACE conference is an opportunity to consider the current status and chart the future role of the Committee at a time when actors, both governmental and non-governmental, are increasingly getting involved in ventures to explore space and carry out space activities. It has been 16 years since UNISPACE III, which was, by all accounts, a success both substantively and organizationally. UNISPACE III was also the last United Nations global conference

of the previous millennium. Much has changed in the global space enterprise since the beginning of the twenty-first century, and it is appropriate for the global space community to take stock of what has been accomplished and what can be expected for the future, including by looking into the results of the multi-year review of the implementation of UNISPACE III (the "UNISPACE III+5" review).

10. The Committee, together with its subsidiary bodies and its secretariat, provides a unique platform at the global level. The interrelationship between major space-faring nations and emerging space nations, and the dialogue between them relating to increased international cooperation and capacity-building efforts for the benefit of developing countries, have laid the groundwork for success over the years. The space agenda is evolving and becoming more complex, not least because of the broader concept of space security and the expanding commercial space sector. The nature of space activities is evolving to meet those realities. The development of international mechanisms such as guidelines, codes and other confidence-building measures are reflective of this new environment.

11. Addressing challenges to humanity and sustainable development, protecting the space environment and securing the long-term sustainability of outer space activities all require further attention. The post-2015 development agenda will be adopted in 2015 with the establishment of new sustainable development goals, and this major target argues for stronger space governance and supporting structures at all levels, including improved spatial data infrastructure.

12. Since the beginning of the space age, international cooperation in the peaceful uses of outer space has evolved in such a way as to provide the impetus for a consideration of international mechanisms and infrastructures for space cooperation and coordination mechanisms at the international, regional, interregional and national levels. Against this background there could also be a consideration of ways and means for strengthening the role of the Office and the Committee within the United Nations system and the global space community.

13. Leading towards 2018 there will be a number of specific milestones in the work of the Committee and its subsidiary bodies where governance structures are addressed, inter alia:

(a) The General Assembly, at its seventieth session, in 2015, will hold a joint ad hoc meeting of the First and Fourth Committees on transparency and confidence-building measures in outer space activities, and the Committee on the Peaceful Uses of Outer Space has established procedures to study how those measures relate to the safety of space operations and the long-term sustainability of outer space activities in general;

(b) The tenth anniversary of the International Committee on Global Navigation Satellite Systems will be commemorated in 2015;

(c) 2016 will mark the tenth anniversary of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER);

(d) The guidelines on the long-term sustainability of outer space activities are scheduled to be adopted in 2016;

(e) 2017 will mark the fiftieth anniversary of the Outer Space Treaty;

(f) The Legal Subcommittee multi-year agenda item on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space concludes in 2017;

(g) The Space Mission Planning and Advisory Group and the International Asteroid Warning Network are being established as coordination mechanisms for addressing the near-Earth object impact threat;

(h) The workplan for the socioeconomic and sustainable development items of the Committee and its Scientific and Technical Subcommittee concludes in 2018; and

(i) In 2014, the Scientific and Technical Subcommittee established new working mechanisms for considering space weather and global health through dedicated expert groups.

14. In addition, the next International Space Exploration Forum is expected to take place in 2016 or 2017. In the summary of the 2014 Forum, the participants acknowledged that the Committee is an important venue for expanding humanity's horizons in space and that there is a need for discussion of international frameworks and common principles for collaboration in future space exploration.

15. It is clear that the format to mark "UNISPACE+50" requires a different and more simplified approach than that used for the past UNISPACE conferences due to the current nature of space affairs and financial situation. Thus, the following main structure is proposed:

(a) The group of members of the bureaux of the Committee and its subsidiary bodies (the "Group of 15"), the chairs of the working groups of the Committee and its subsidiary bodies, and the Director of the Office for Outer Space Affairs together serve as the steering committee for the preparations for "UNISPACE+50";

(b) The sessions of the Committee, its Scientific and Technical Subcommittee and its Legal Subcommittee in 2018 will not change in duration and format in connection with the "UNISPACE+50" agenda. There will be no additional cost for servicing those bodies in 2018;

(c) The Committee and its subsidiary bodies should address "UNISPACE+50" as the overarching theme under their respective agendas, and States members of the Committee and permanent observers of the Committee should be encouraged to address certain thematic priorities under "UNISPACE+50" to be agreed in the preparatory years 2015-2017;

(d) All Member States of the United Nations and the broader space community, including United Nations entities, other international intergovernmental and non-governmental organizations and the private sector, should be invited to participate in a dedicated commemorative segment of the Committee in June 2018;

(e) The report of the Committee to the General Assembly in 2018 could be labelled using the "UNISPACE+50" theme and a dedicated General Assembly resolution or declaration could be adopted in 2018; and

(f) The next report of the Secretary-General on the coordination of space-related activities within the United Nations system will be issued in 2016. It

could look into how United Nations system entities interact with each other and other stakeholders in supporting global governance of space activities. The report could serve as an input to the "UNISPACE+50" thematic cycle.

III. Identifying thematic priorities under the overarching theme "fiftieth anniversary of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space" and building synergies with the United Nations summits and conferences on global development

16. The Working Group of the Whole of the Scientific and Technical Subcommittee in 2015 agreed that the following cross-cutting topics could be considered in presenting the unique role of the Office for Outer Space Affairs, the Committee on the Peaceful Uses of Outer Space and the subsidiary bodies of the Committee (see A/AC.105/1088, annex I, para. 4):

(a) Governance, including the United Nations treaties and principles on outer space, guidelines adopted by the Committee and General Assembly resolutions on outer space;

(b) Capacity-building, including activities of States members of the Committee and permanent observers to the Committee, and work undertaken by the Office for Outer Space Affairs and the regional centres on space science and technology education, affiliated to the United Nations;

(c) Resiliency, including matters related to the ability to depend on space systems and to respond to the impact of events such as adverse space weather;

(d) Interoperability, including work done by the International Committee on Global Navigation Satellite Systems and other coordination mechanisms;

(e) Space for sustainable development, including consideration of the contribution of the Committee to the United Nations Conference on Sustainable Development (A/AC.105/993) and efforts by the Committee and its member States to meet global development goals.

17. Building upon those cross-cutting areas consideration should also be given to governance structures such as national spatial data infrastructures, national regulatory frameworks, international mechanisms for space cooperation and regional and interregional coordination mechanisms; to already established or potential new mechanisms and processes for resiliency and interoperability such as in the fields of disaster risk reduction and coordination of efforts relating to the near-Earth object impact threat; and to transparency and confidence-building measures and mechanisms for the long-term sustainability of outer space activities within the broader context of space security.

18. In the identification of a core set of thematic priorities, the work carried out by the Committee and its subsidiary bodies should be taken into account, including processes under related agenda items, the role of symposiums being held regularly during the sessions of the two Subcommittees in the period leading up to 2018, as well as the programme of work of the Office for Outer Space Affairs.

19. In addition, the High-Level Forum: Space as a Driver for Socioeconomic Sustainable Development, to be organized by the Office for Outer Space Affairs and hosted by the United Arab Emirates, and to be held from 15 to 17 November 2015 in Dubai, should be considered in this context. This will be the first in a series of three conferences leading up to "UNISPACE+50". It will address space economy, space society, space accessibility and space diplomacy.

20. The Working Group of the Whole also recommended that the objective and the main approach contained in A/AC.105/C.1/2015/CRP.15 should be consolidated with the preparatory work to be undertaken prior to the "UNISPACE+50" thematic cycle of the Committee.

21. In that context it could be useful to study the evolution of space activities over the past fifty years, in particular the increase of space activities and the associated development of national infrastructures in developing countries. Such a study would also be connected to the ongoing review of international mechanisms for cooperation in the peaceful exploration and use of outer space.

22. The Working Group of the Whole further agreed that the preparatory work for 2018 could benefit from the work of the expert group on space and global health and the proposed new thematic priority for the United Nations Programme on Space Applications: space technologies for monitoring and protecting biodiversity and ecosystems (A/AC.105/C.1/2015/CRP.31).

23. In this context, the special report of UN-Space on space for global health (A/AC.105/1091) prepared by the Office for Outer Space Affairs, in cooperation with the World Health Organization, the Cartographic Section of the Department of Field Support and the secretariat of the United Nations Framework Convention on Climate Change, serves as a contribution to the work of the newly established expert groups of the Scientific and Technical Subcommittee on space and global health and on space weather, and for the preparations of the "UNISPACE+50" theme of the Committee and its subsidiary bodies.

24. Furthermore, the contributions in the special reports of UN-Space on new and emerging technologies, applications and initiatives for space-related inter-agency cooperation (A/AC.105/843), space benefits for Africa: contribution of the United Nations system (A/AC.105/941), use of space technology within the United Nations system to address climate change issues (A/AC.105/991), and space for agriculture development and food security (A/AC.105/1042), should also be considered.

25. The recent reports of the Secretary-General for the periods 2012-2013 and 2014-2015 on the coordination of space-related activities within the United Nations system: directions and anticipated results (A/AC.105/1014 and A/AC.105/1063) should be assessed in the context of preparing the next report of the Secretary-General for the period 2016-2017, which will address the contribution of the United Nations system to global space governance, with the specific purpose of providing input to the "UNISPACE+50" theme.

26. In view of the suggestion by the Working Group of the Whole that the preparatory work for 2018 could benefit from the new thematic priority area on biodiversity and ecosystems, synergies with and benefits from other priority areas under the United Nations Programme on Space Applications and activities under the UN-SPIDER programme, could also be studied, as appropriate.

27. In building synergies with the global conferences held within the United Nations system and relevant to the work of the Committee and global space governance, the following milestone United Nations summits and conferences could be addressed, among others:

(a) The third United Nations World Conference on Disaster Risk Reduction, held in Sendai, Japan, from 14 to 18 March 2015, and its outcome document on a framework for disaster risk reduction for 2015-2030;

(b) The United Nations summit to adopt the post-2015 development agenda, to be held in New York from 25 to 27 September 2015;

(c) The twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, to be held in Paris from 30 November to 11 December 2015.

28. The Committee and its Scientific and Technical Subcommittee, at their respective sessions in 2016 and 2017, could discuss the outcomes of those summits and global conferences with a view to considering synergies with the overall work of the Committee, including on the future role of the Committee in meeting those goals.

29. The Committee, its Scientific and Technical Subcommittee and its Legal Subcommittee, at their respective sessions in 2018, are to address "UNISPACE+50" as the overarching theme under their respective agendas, within the framework of the thematic priorities identified in 2016, and building upon the cross-cutting areas (see para. 16). In doing so, they are to take into consideration contributions by States members of the Committee and permanent observers of the Committee, contributions by UN-Space received through the Office, and contributions from other relevant conferences and activities addressing global space governance, such as the series of the High-Level Forum organized by the Office. In this overall context, the following could serve as general guidance for addressing the thematic priorities:

(a) The Committee, its Scientific and Technical Subcommittee and its Legal Subcommittee, at their respective sessions in 2016, should identify and agree on thematic priorities for consideration under the "UNISPACE+50" thematic cycle;

(b) The Legal Subcommittee, in 2016, should identify proposals to mark the fiftieth anniversary of the Outer Space Treaty in 2017, as well as the outcome of the Subcommittee's Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space, in particular in view of the "UNISPACE+50" theme;

(c) The Scientific and Technical Subcommittee and the Legal Subcommittee, at their respective sessions in 2017, should identify elements for consideration by the Committee in 2017, which would constitute the basis for the outcome of "UNISPACE+50".

IV. Role of the Office for Outer Space Affairs

30. The General Assembly, in its resolution 69/85, paragraph 16, recognized the central role of the Office for Outer Space Affairs in fostering capacity-building in

the use of space science and technology and their applications for the benefit of all countries, in particular developing countries, and urged all Member States to contribute to the Trust Fund in Support of the United Nations Programme on the Peaceful Uses of Outer Space in order to enhance the capacity of the Office to provide technical and legal advisory services in its priority thematic areas.

31. In this context, and in the lead-up to the "UNISPACE+50" thematic cycle, the unique role played by the Office in supporting the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies should be studied with a view to considering ways and means for strengthening the role of the Office within the United Nations system and the global space community.

32. As part of the preparations for the "UNISPACE+50" thematic cycle, the Office should:

(a) Establish mechanisms under the Trust Fund for receiving voluntary contributions in support of the Office's preparations for the "UNISPACE+50" thematic cycle of the Committee and its subsidiary bodies;

(b) Identify the modalities for the high-level event in 2018 to mark the "UNISPACE+50" anniversary, open to all States Members of the United Nations, as well as the option of dedicating the Monday and Tuesday ahead of the 2018 session of the Committee to a symposium involving intergovernmental and non-governmental organizations, the private sector, civil society and other relevant stakeholders;

(c) Identify modalities for organizing a dedicated treaty event to be held during the seventy-second session of the General Assembly on the occasion of the fiftieth anniversary of the Outer Space Treaty in 2017;

(d) Prepare a draft report for the session of the Scientific and Technical Subcommittee to be held in 2016 in the form of a conference room paper providing an outline for the consolidation of A/AC.105/C.1/2015/CRP.15 with the "UNISPACE+50" theme and an overview of the evolution of space activities over the past fifty years, in particular the increase in space activities of developing countries. The main outcome of the three UNISPACE Conferences and the review of the implementation of UNISPACE III (UNISPACE III+5) should also be addressed. Upon further guidance by the Committee and its subsidiary bodies at their respective sessions in 2016, the report should be submitted in the six official languages of the United Nations to the Scientific and Technical Subcommittee, in 2017;

(e) Prepare the report by the Secretary-General on the coordination of space-related activities within the United Nations system for the period 2016-2017 on the theme of contributions of the United Nations system to global space governance, for submission in the six official languages of the United Nations to the Committee in 2016;

(f) On the basis of the thematic priorities identified by the Committee and its subsidiary bodies in 2016, invite States members of the Committee and permanent observers of the Committee to submit their views on the basis of a questionnaire addressing those thematic priorities, for submission in the six official languages of the United Nations to the respective sessions of the Committee and its subsidiary bodies in 2017;

(g) Work closely with the Department of Public Information to promote "UNISPACE+50" globally, including setting up a dedicated web page containing an overview of the role of the three UNISPACE Conferences, the Office and the Committee, with supporting background documentation, links to historical documents, photos and other multimedia content; and

(h) Within its regular programme of work, align capacity-building activities with "UNISPACE+50" through the United Nations Programme on Space Applications, UN-SPIDER, its capacity-building programme on space law, and, as appropriate, in cooperation with the regional centres on space science and technology education, affiliated to the United Nations.